

Model Name: 8I945G

Revision 1.1

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SHEET

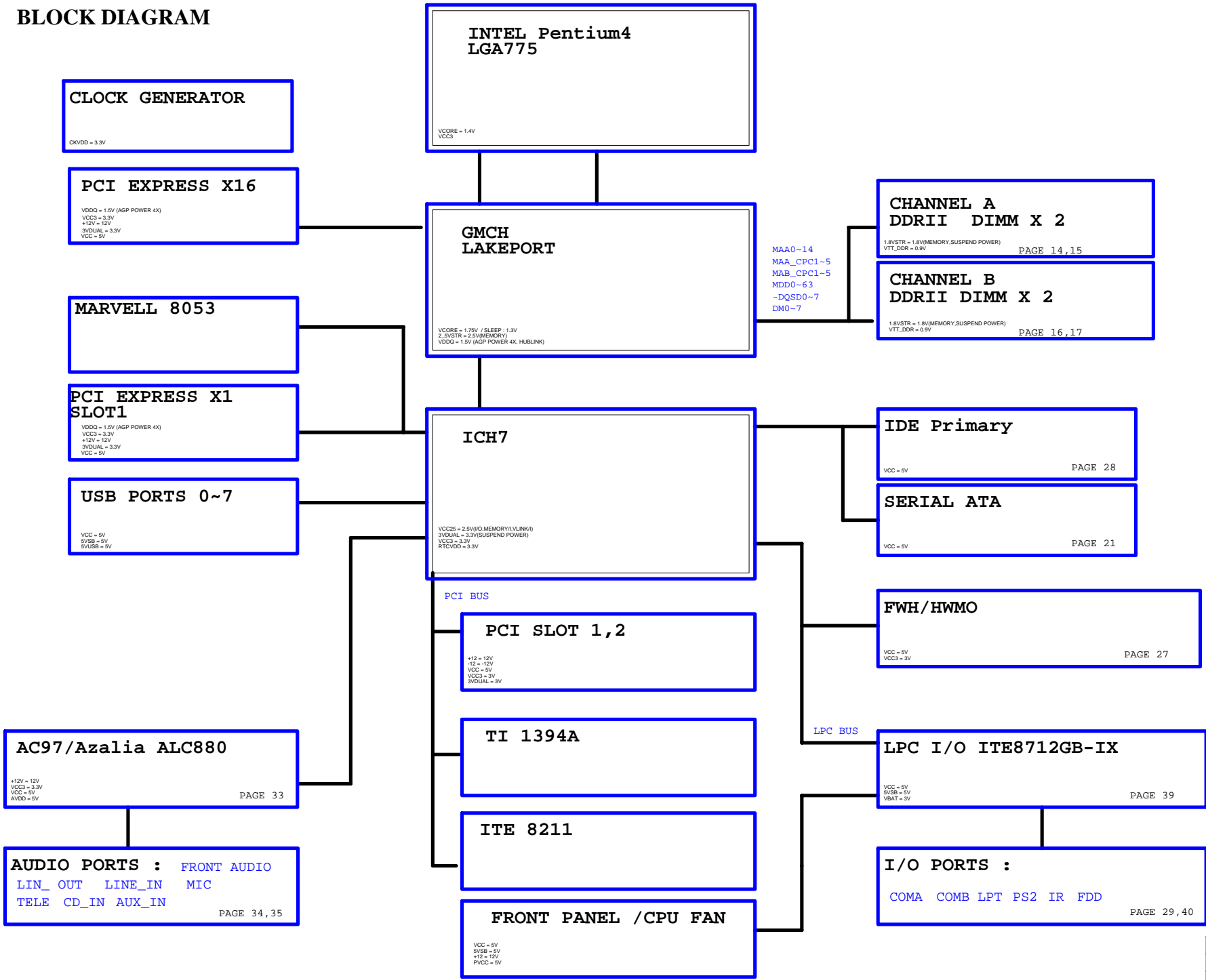
TITLE

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BLOCK DIAGRAM



**Version: 1.1**

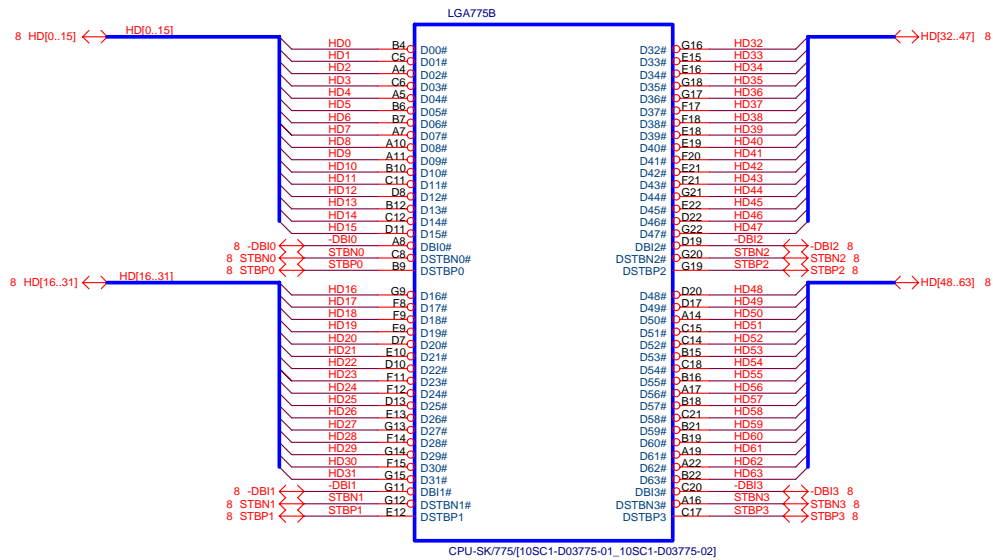
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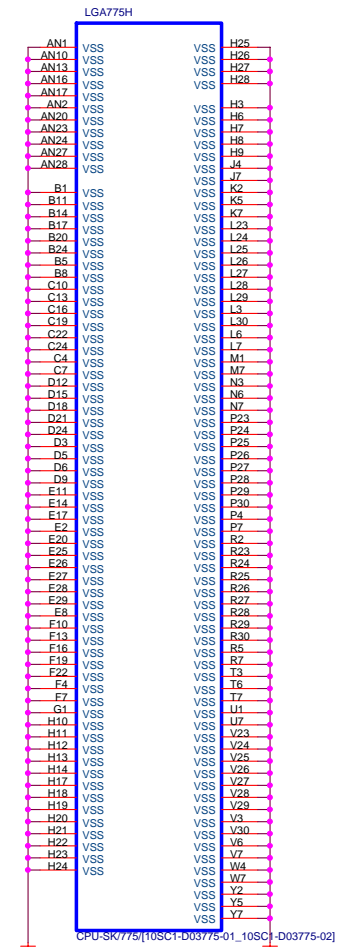
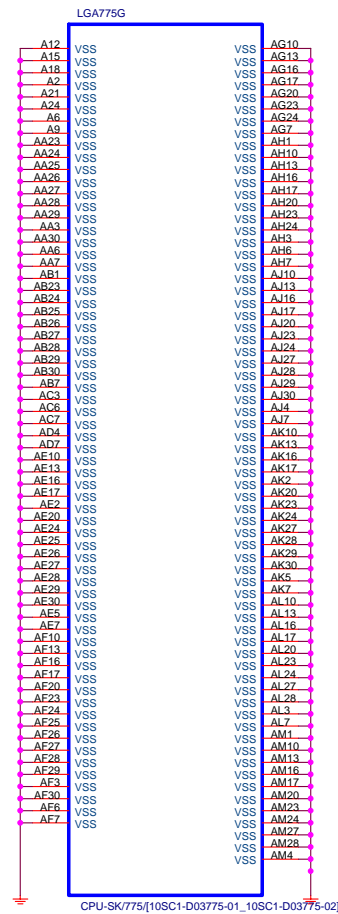
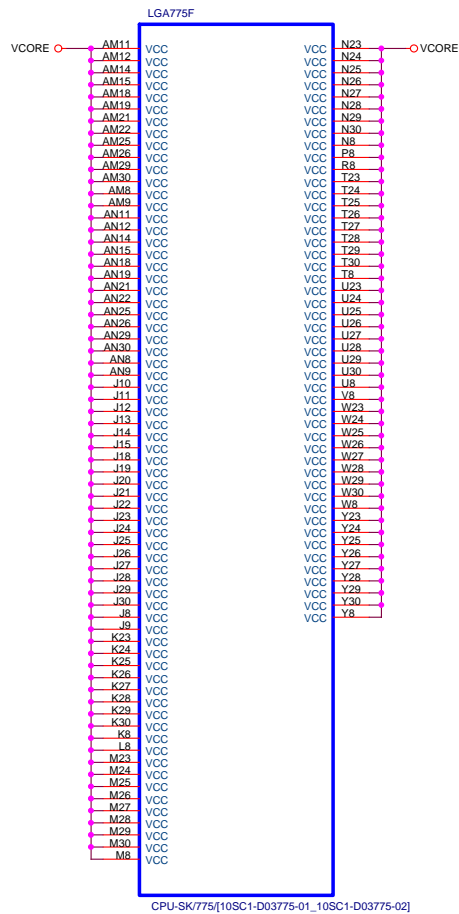
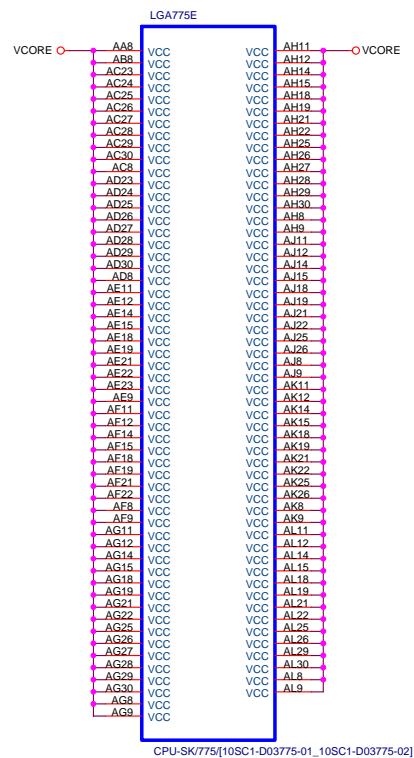
Circuit or PCB layout change  
for next version

[illegible]





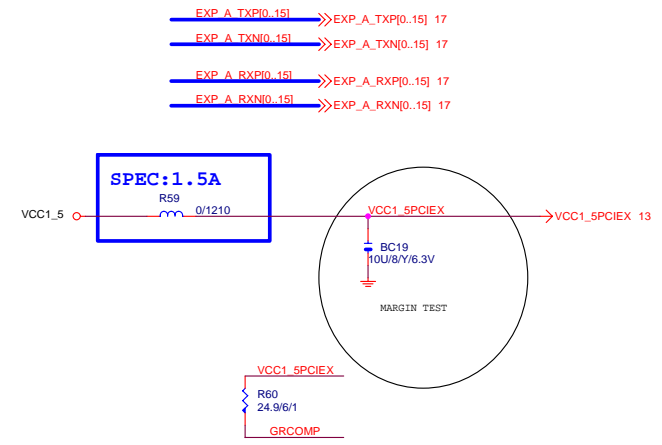
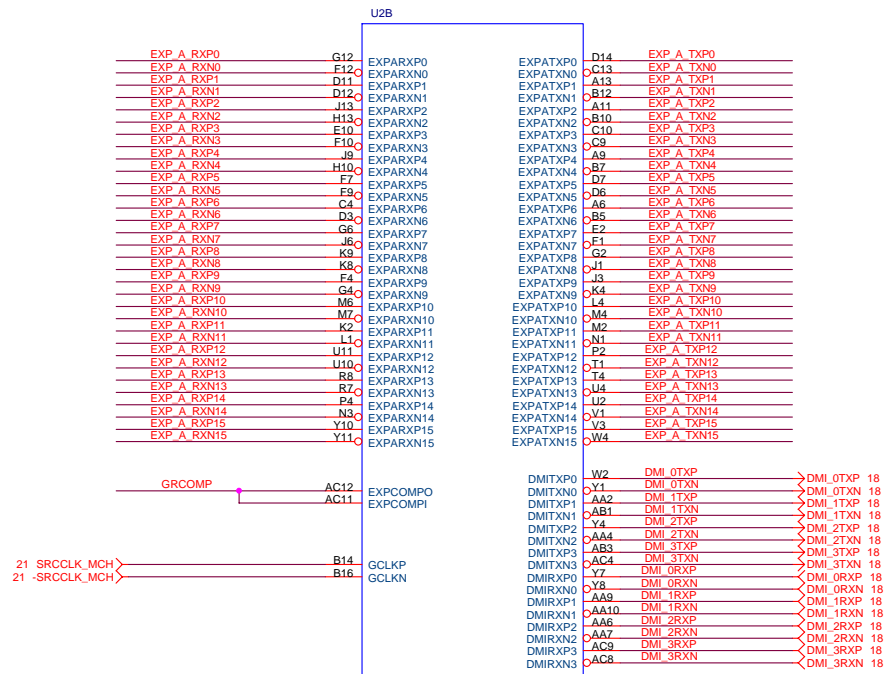




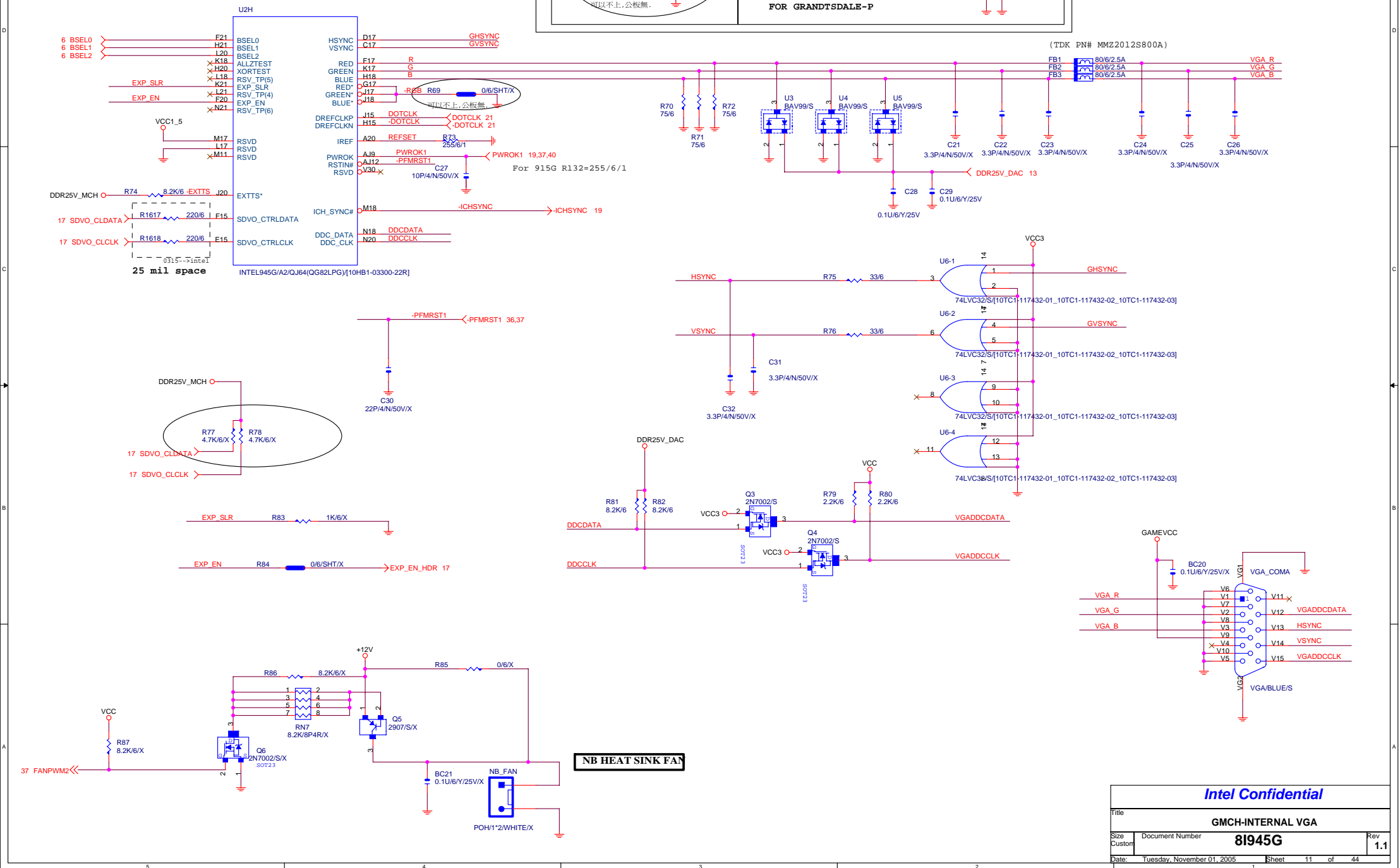


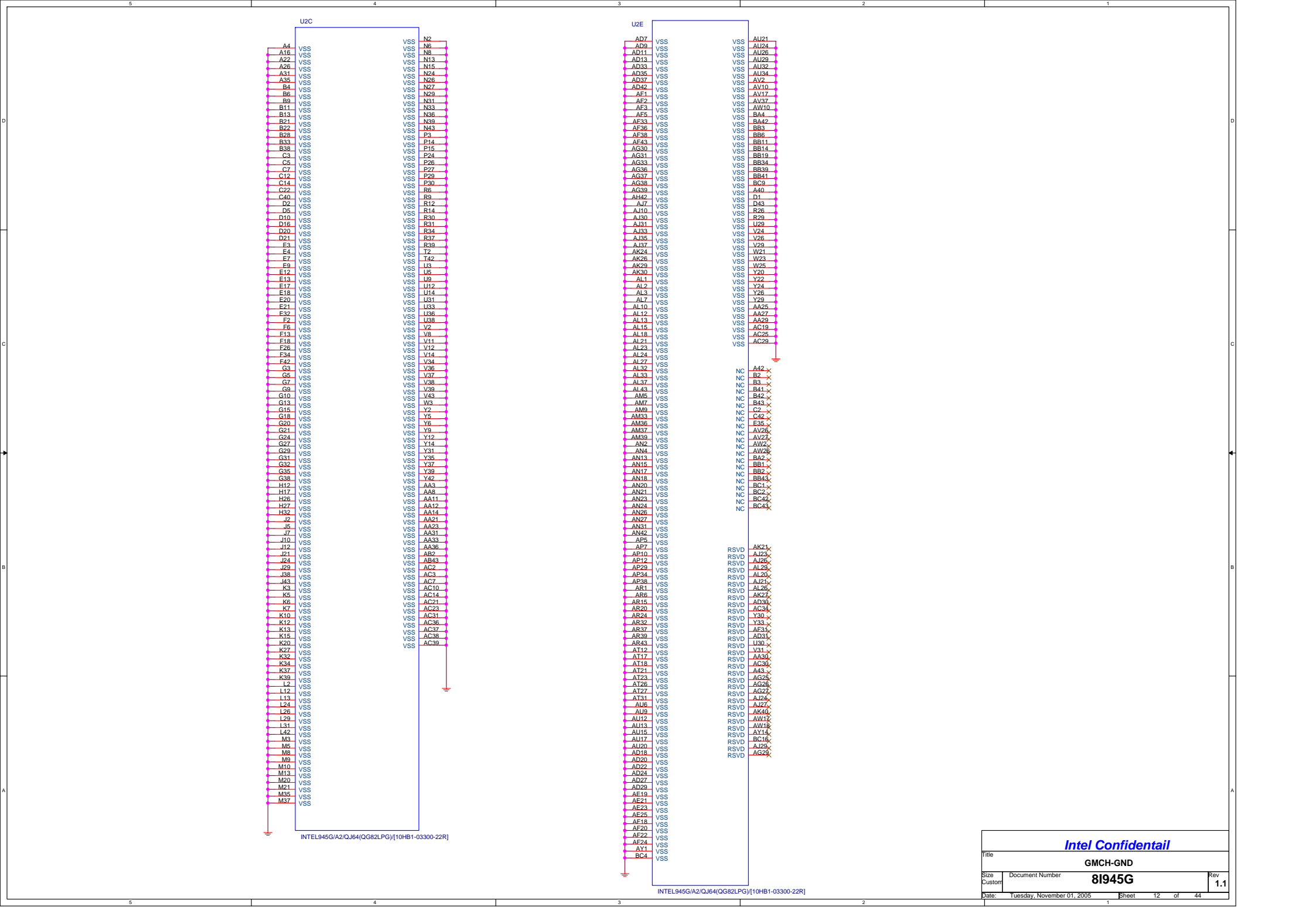






INTEL945G/A2/QJ64/QG82LPG/[10HB1-03300-22R]





1.425~1.575V

1.7~1.9V

VCCA\_EXPPLL=VCCA\_GPLL=45mA(1.425V~1.575V)

VCCA\_HPLL&gt;50mA 公板爲200mA(1.425V~1.575V)

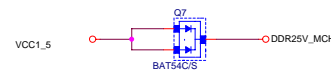
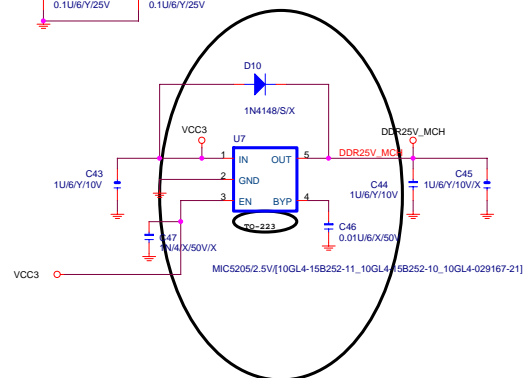
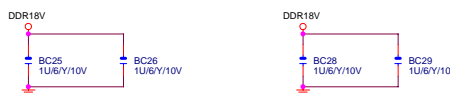
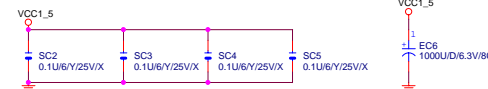
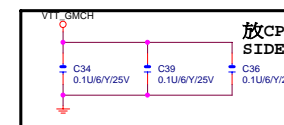
VCCA\_DPLLA=65mA(1.425V~1.575V)

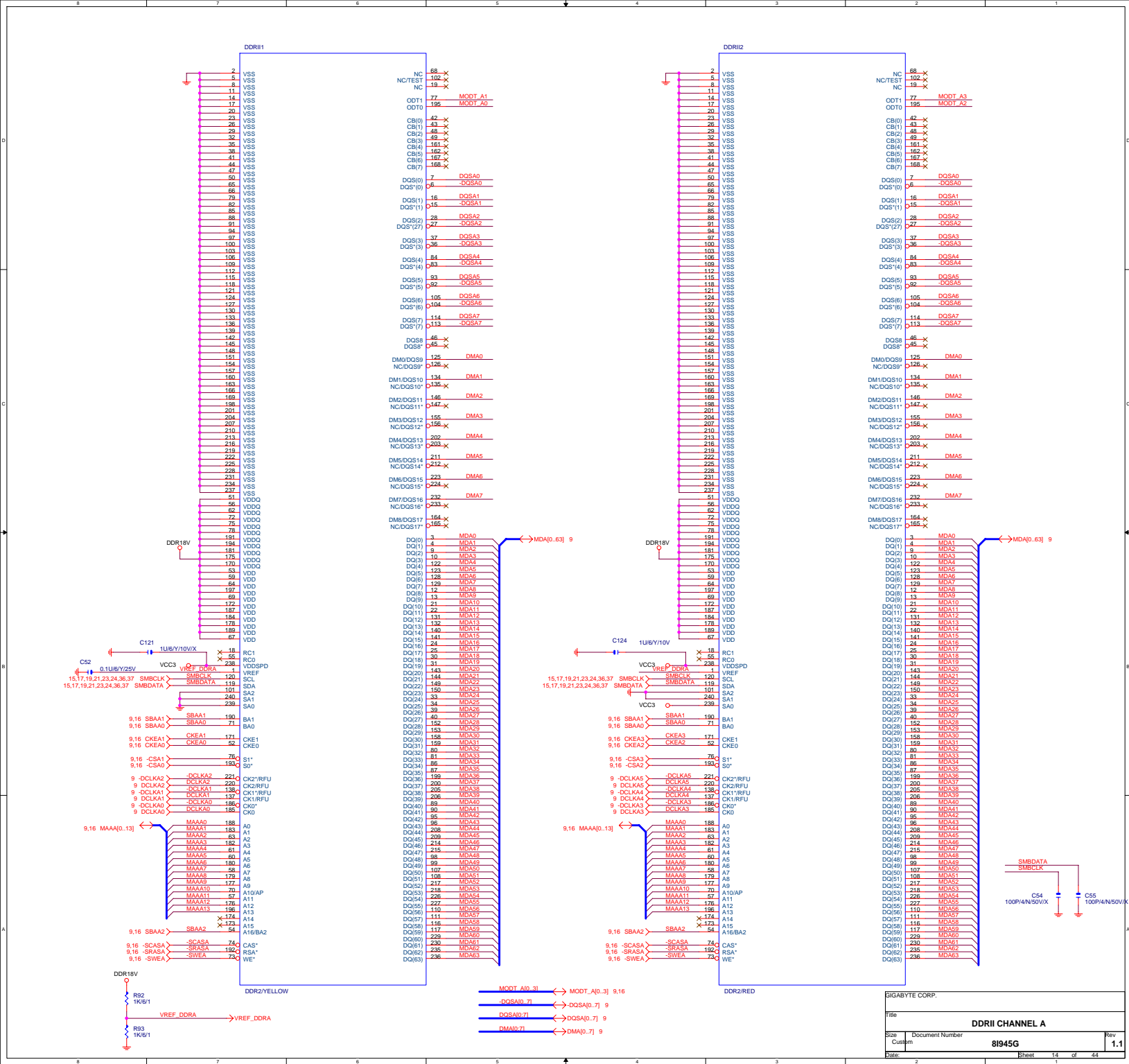
VCCA\_DPLLB=65mA(1.425V~1.575V)

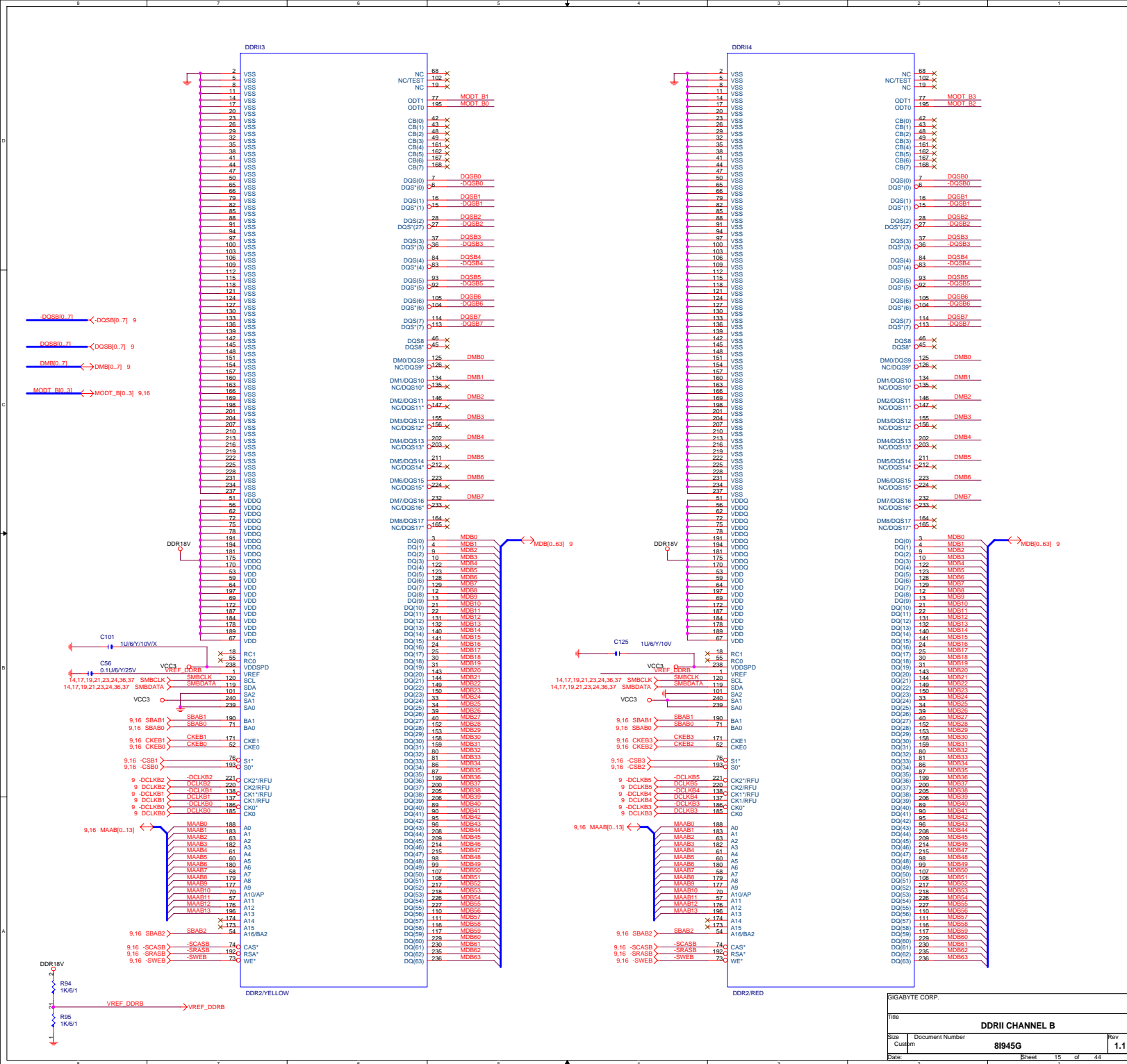
VCCA\_MPLL&gt;50mA(1.425V~1.575V)

VCCA\_DAC=DDR25V\_DAC=70mA(2.375~2.625V)

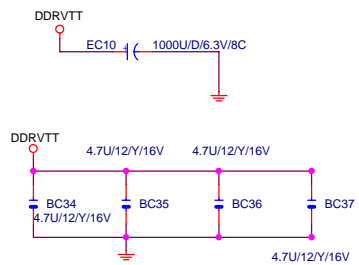
945 Design Guide rev1.5 spec.  
VCCA\_EXPPLL=VCCA\_GPLL=45mA(1.425V~1.575V)  
VCCA\_HPLL>50mA 公板爲200mA(1.425V~1.575V)  
VCCA\_DPLLA=65mA(1.425V~1.575V)  
VCCA\_DPLLB=65mA(1.425V~1.575V)  
VCCA\_MPLL>50mA(1.425V~1.575V)  
VCCA\_DAC=DDR25V\_DAC=70mA(2.375~2.625V)



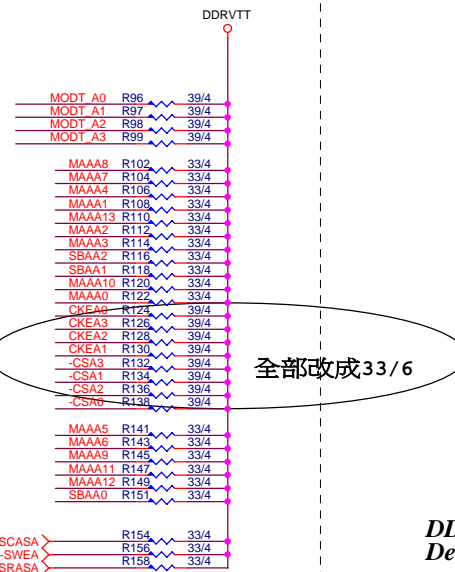
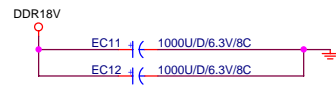




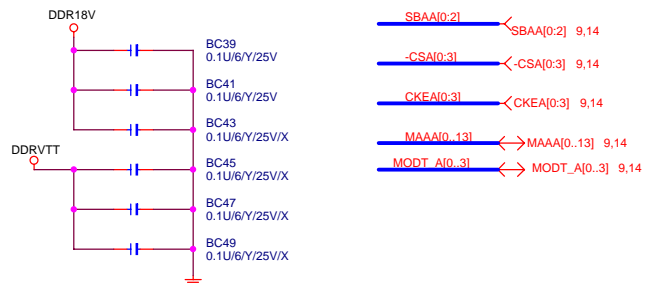
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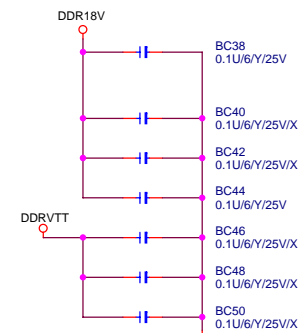
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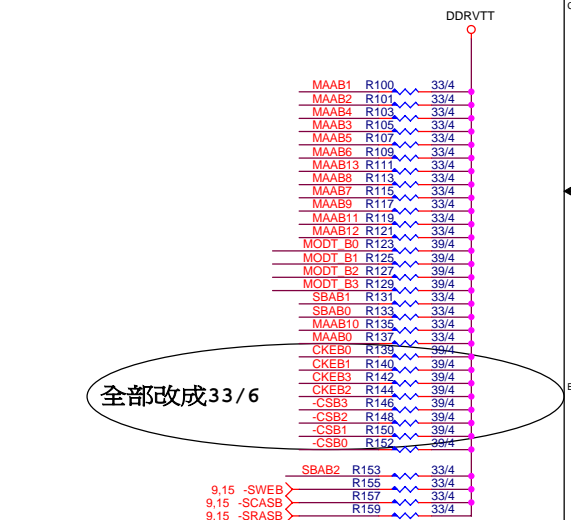
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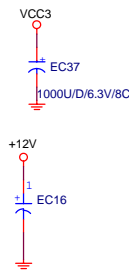
### *DDRVTT Decouple*



**CHANNEL B**







14,15,19,21,23,24,36,37 SMBCLK  
14,15,19,21,23,24,36,37 SMBDATA

23 -PE\_WAKE

11 SDVO\_CLKCLK

11 SDVO\_CLDATA

11 EXP\_EN\_HDR  
VCC3 R1619 1K/6/X  
0315-->Intel

EXP A TXP0[0..15] >>> EXP\_A\_TXP0[0..15] 10  
EXP A TXN0[0..15] >>> EXP\_A\_TXN0[0..15] 10

EXP A TXP0	C59	0.1U/6/Y/25V	EXP A TXP0C
EXP A TXN0	C60	0.1U/6/Y/25V	EXP A TXN0C
EXP A TXP1	C61	0.1U/6/Y/25V	EXP A TXP1C
EXP A TXN1	C62	0.1U/6/Y/25V	EXP A TXN1C
EXP A TXP2	C63	0.1U/6/Y/25V	EXP A TXP2C
EXP A TXN2	C64	0.1U/6/Y/25V	EXP A TXN2C
EXP A TXP3	C65	0.1U/6/Y/25V	EXP A TXP3C
EXP A TXN3	C66	0.1U/6/Y/25V	EXP A TXN3C
EXP A TXP4	C67	0.1U/6/Y/25V	EXP A TXP4C
EXP A TXN4	C68	0.1U/6/Y/25V	EXP A TXN4C
EXP A TXP5	C69	0.1U/6/Y/25V	EXP A TXP5C
EXP A TXN5	C70	0.1U/6/Y/25V	EXP A TXN5C
EXP A TXP6	C71	0.1U/6/Y/25V	EXP A TXP6C
EXP A TXN6	C72	0.1U/6/Y/25V	EXP A TXN6C
EXP A TXP7	C73	0.1U/6/Y/25V	EXP A TXP7C
EXP A TXN7	C74	0.1U/6/Y/25V	EXP A TXN7C
EXP A TXP8	C75	0.1U/6/Y/25V	EXP A TXP8C
EXP A TXN8	C76	0.1U/6/Y/25V	EXP A TXN8C
EXP A TXP9	C77	0.1U/6/Y/25V	EXP A TXP9C
EXP A TXN9	C78	0.1U/6/Y/25V	EXP A TXN9C
EXP A TXP10	C79	0.1U/6/Y/25V	EXP A TXP10C
EXP A TXN10	C80	0.1U/6/Y/25V	EXP A TXN10C
EXP A TXP11	C81	0.1U/6/Y/25V	EXP A TXP11C
EXP A TXN11	C82	0.1U/6/Y/25V	EXP A TXN11C
EXP A TXP12	C83	0.1U/6/Y/25V	EXP A TXP12C
EXP A TXN12	C84	0.1U/6/Y/25V	EXP A TXN12C
EXP A TXP13	C85	0.1U/6/Y/25V	EXP A TXP13C
EXP A TXN13	C86	0.1U/6/Y/25V	EXP A TXN13C
EXP A TXP14	C87	0.1U/6/Y/25V	EXP A TXP14C
EXP A TXN14	C88	0.1U/6/Y/25V	EXP A TXN14C
EXP A TXP15	C89	0.1U/6/Y/25V	EXP A TXP15C
EXP A TXN15	C90	0.1U/6/Y/25V	EXP A TXN15C

EXP A TXP8C

EXP A TXN8C

EXP A TXP9C

EXP A TXN9C

EXP A TXP10C

EXP A TXN10C

EXP A TXP11C

EXP A TXN11C

EXP A TXP12C

EXP A TXN12C

EXP A TXP13C

EXP A TXN13C

EXP A TXP14C

EXP A TXN14C

EXP A TXP15C

EXP A TXN15C

EXP A TXP16C

EXP A TXN16C

EXP A TXP17C

EXP A TXN17C

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EXP A TXN19C

EXP A TXP20C

EXP A TXN20C

EXP A TXP21C

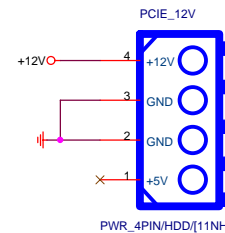
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EXP A TXP22C

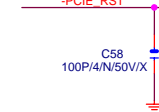
EXP A TXN22C

PCI-E16/[11AC1-021164-61]

PCI\_E\_16 3GIO\_\*16



PWR\_4PIN/HDD/[11NH4-010004-01]/X



EXP A RXP0[0..15] >>> EXP\_A\_RXP0[0..15] 10  
EXP A RXN0[0..15] >>> EXP\_A\_RXN0[0..15] 10

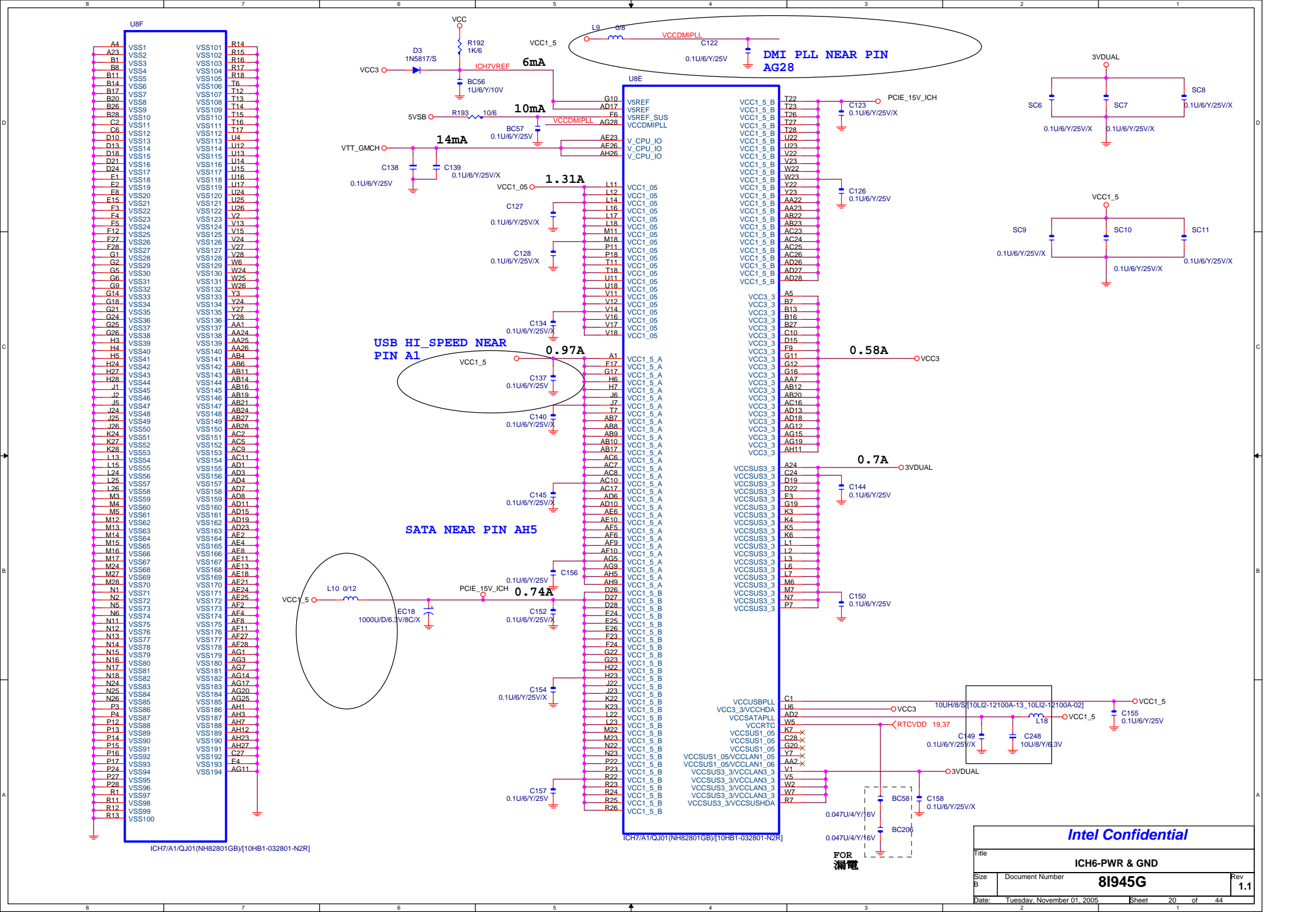
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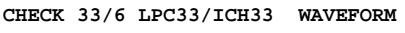
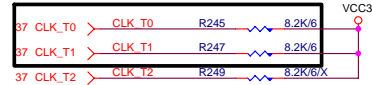
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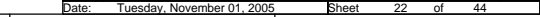
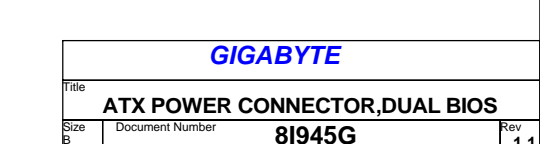
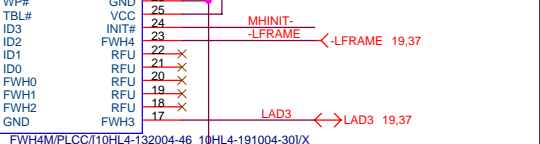
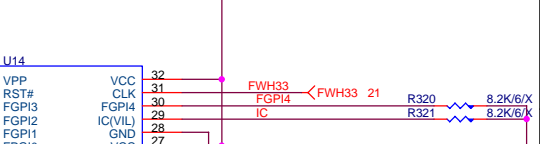
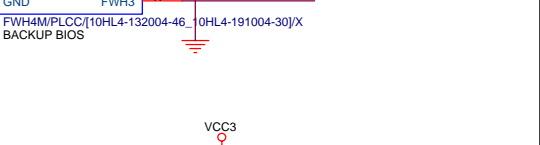
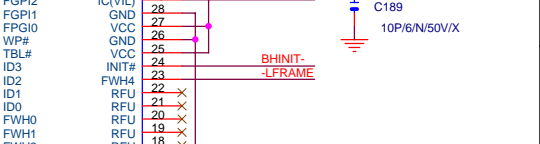
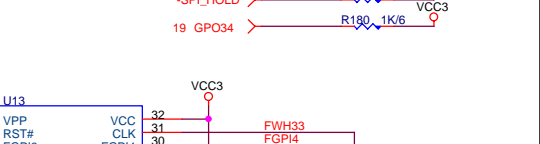
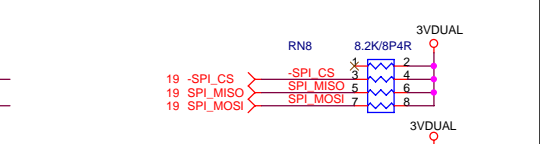
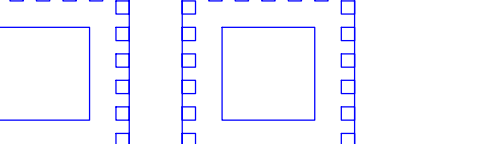
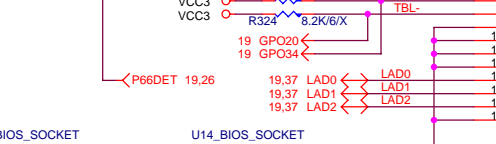
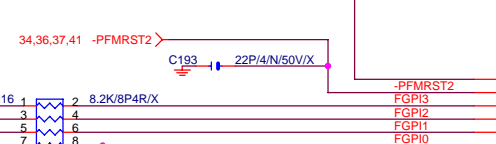
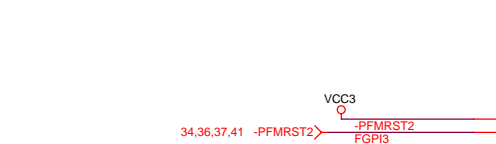
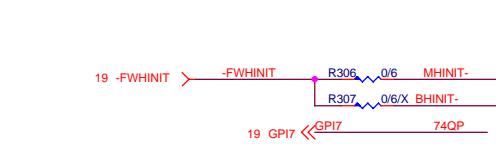
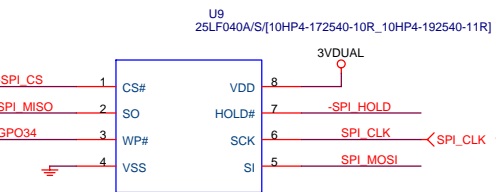
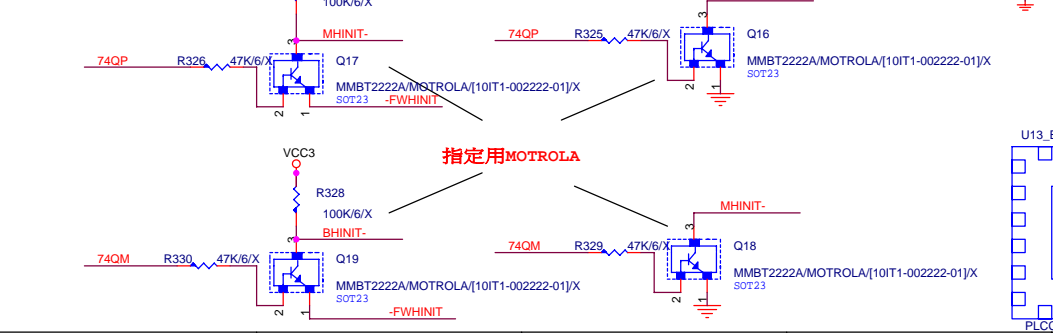
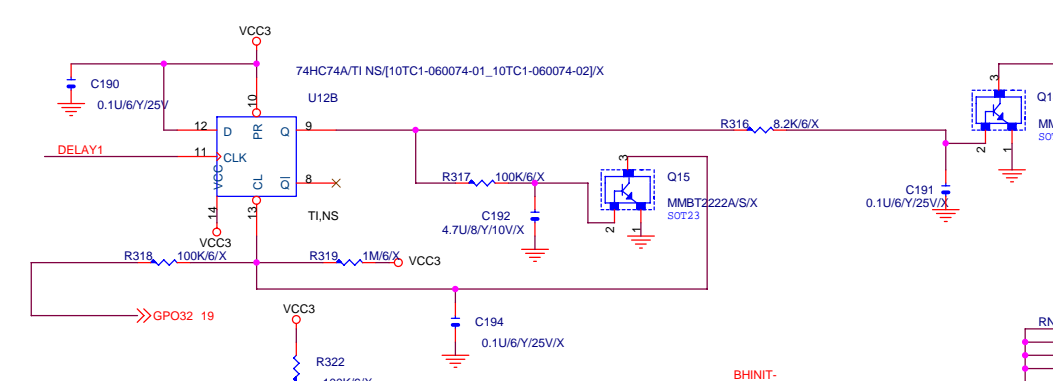
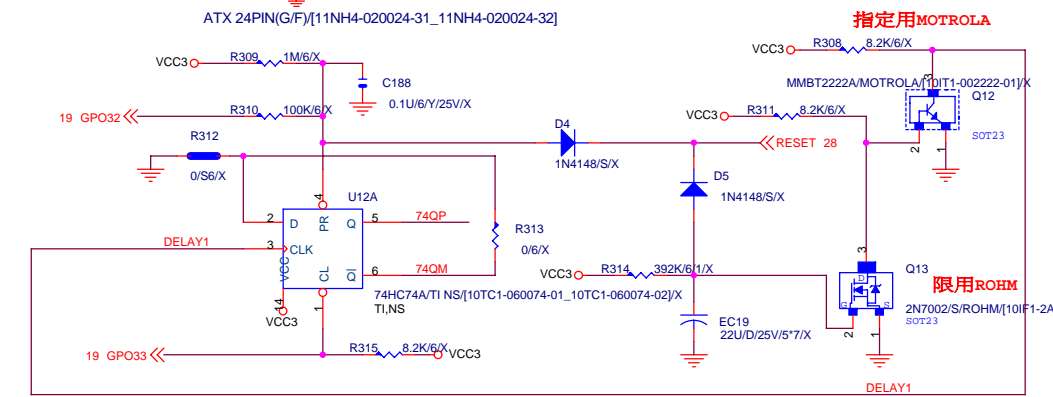
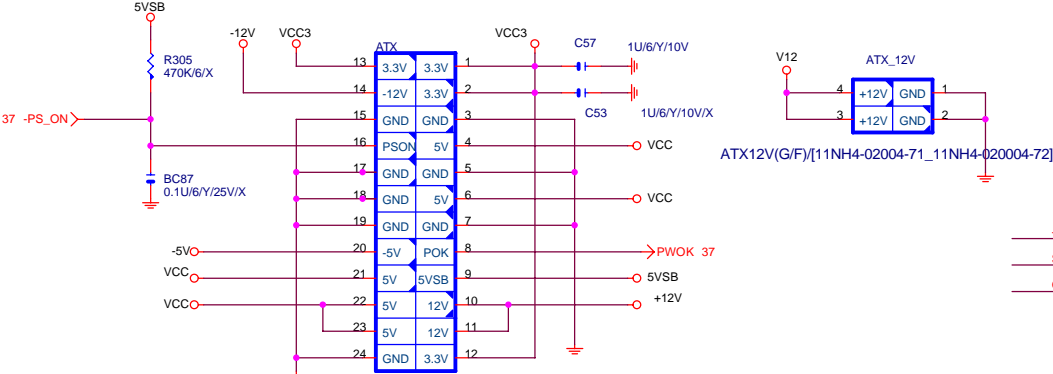


8.2K/6/X R194

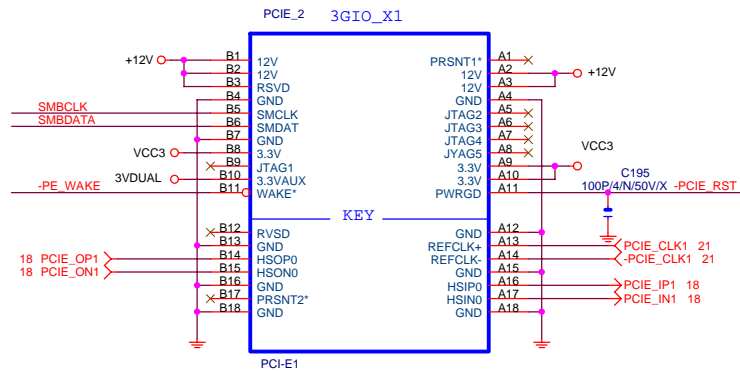
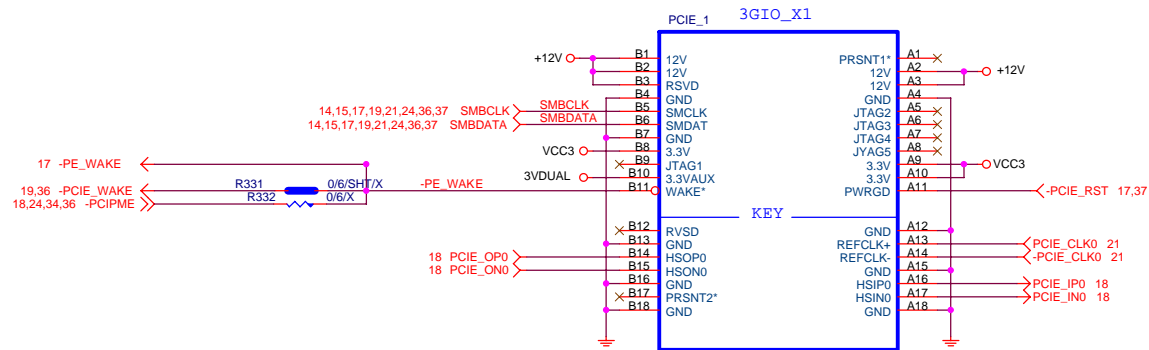


Title			
ICS954148AF			
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# ATX POWER CONNECTOR



GIGABYTE			
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ATX POWER CONNECTOR,DUAL BIOS			
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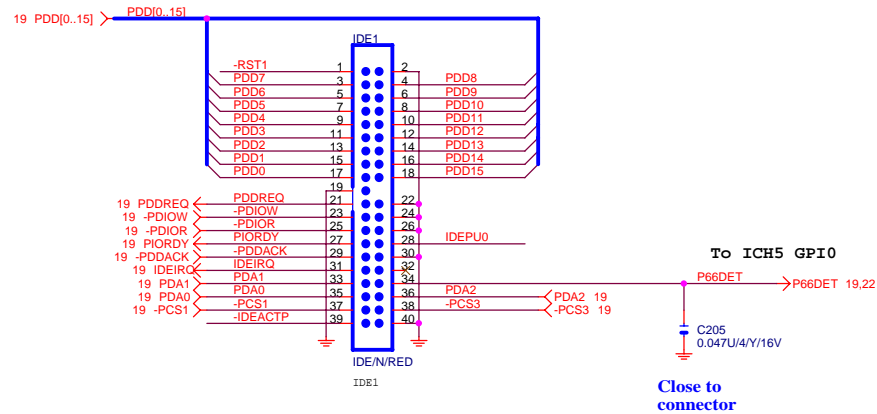
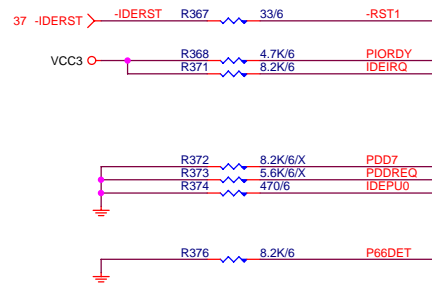
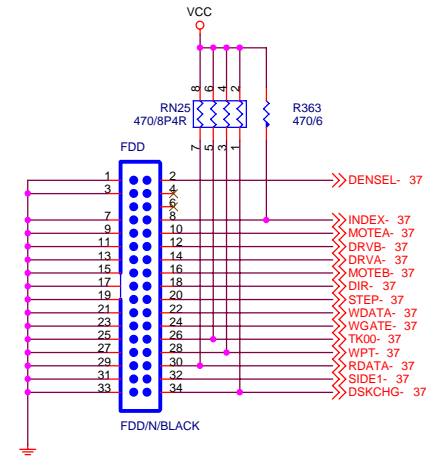
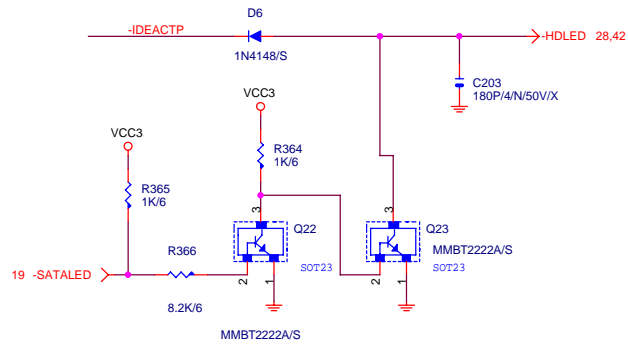




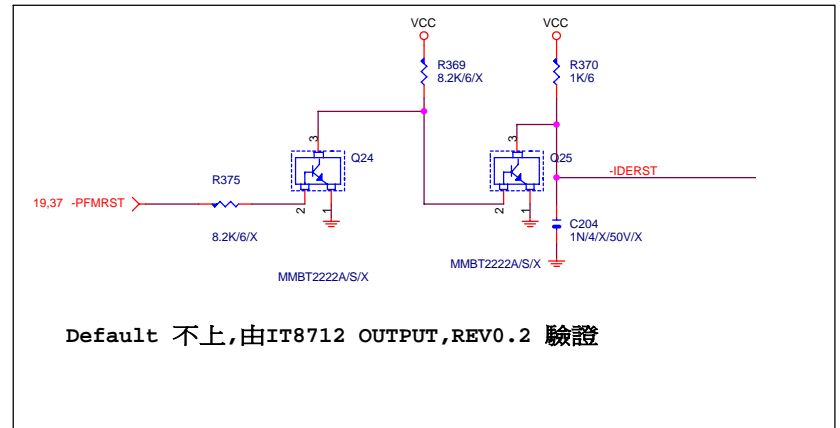






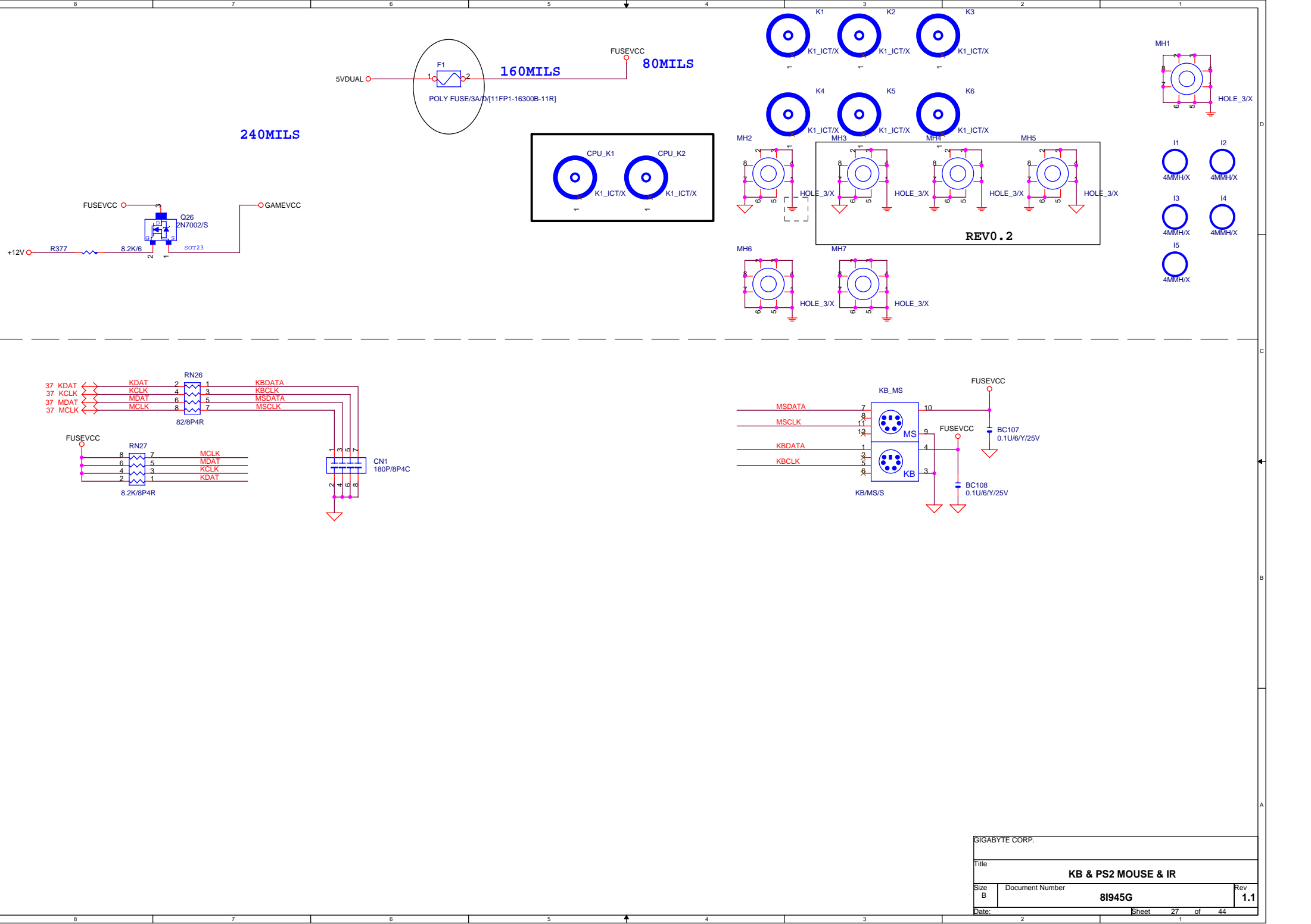


PRIMARY IDE CONNECTOR

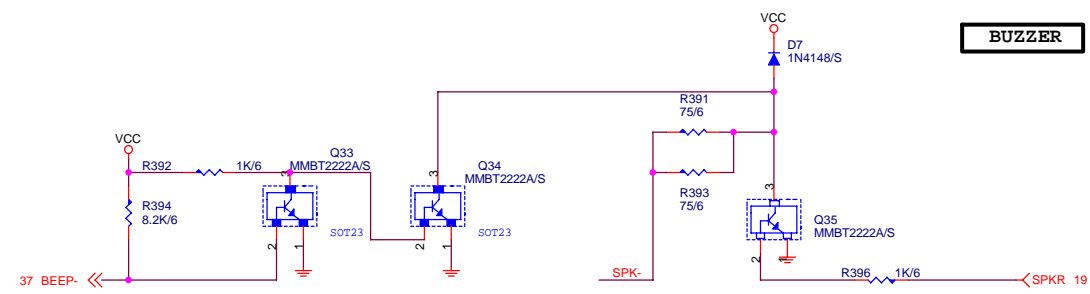
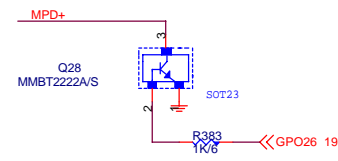
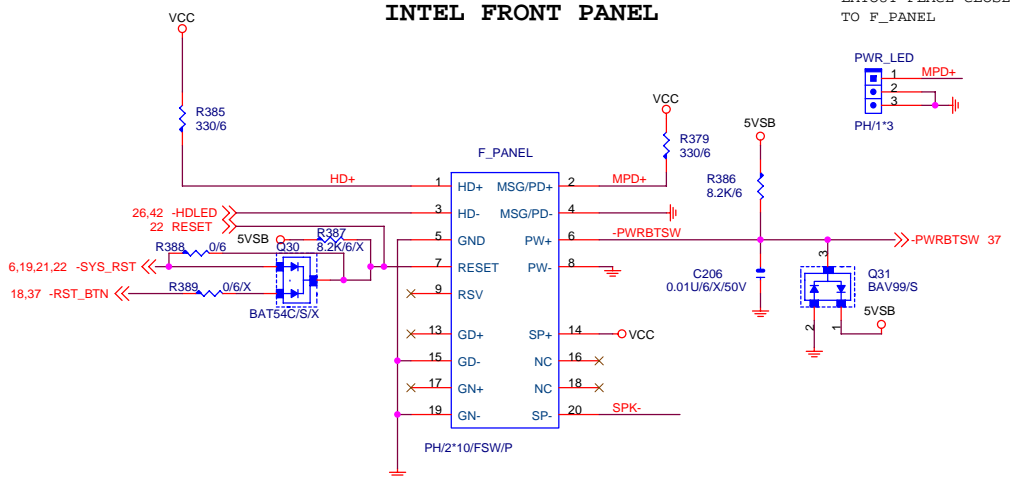


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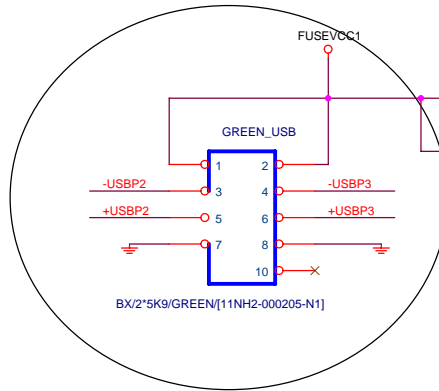
# INTEL FRONT PANEL



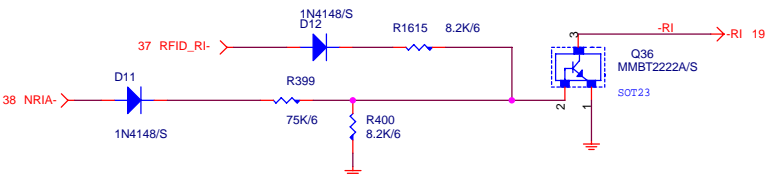
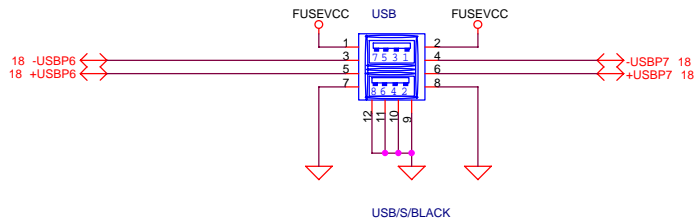
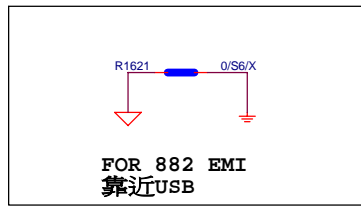
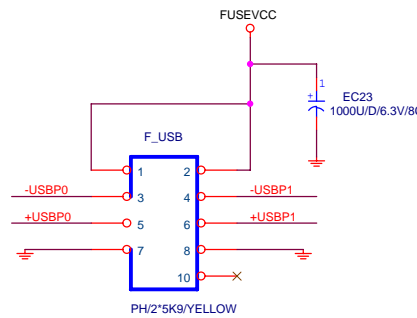
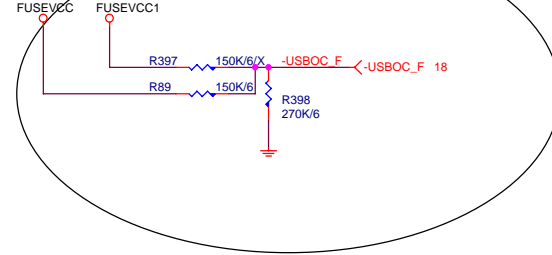
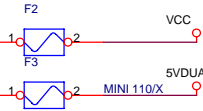
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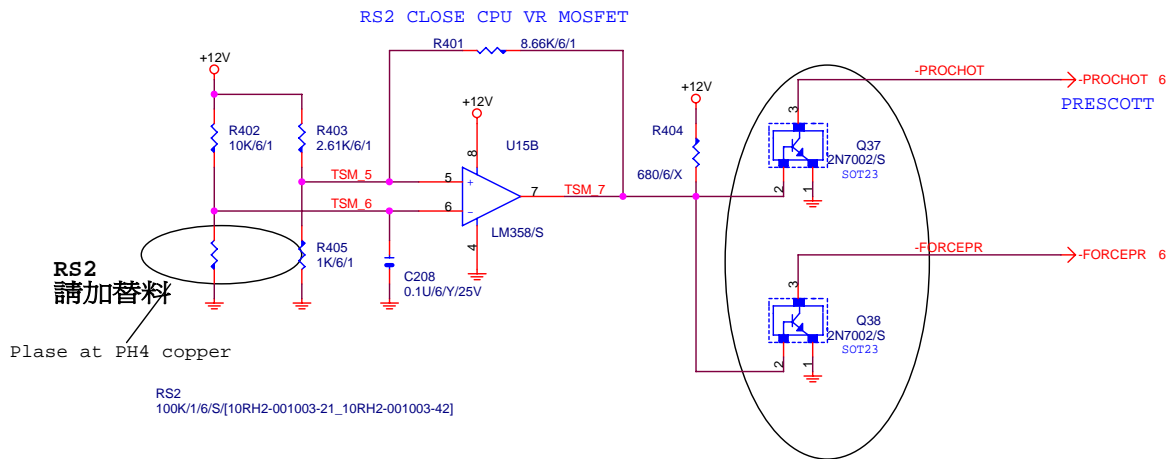
# FRONT USB



MINISMDC110F/6/S/[10FP1-06110B-01\_10FP1-06110B-05\_10FP1-06110B-07]

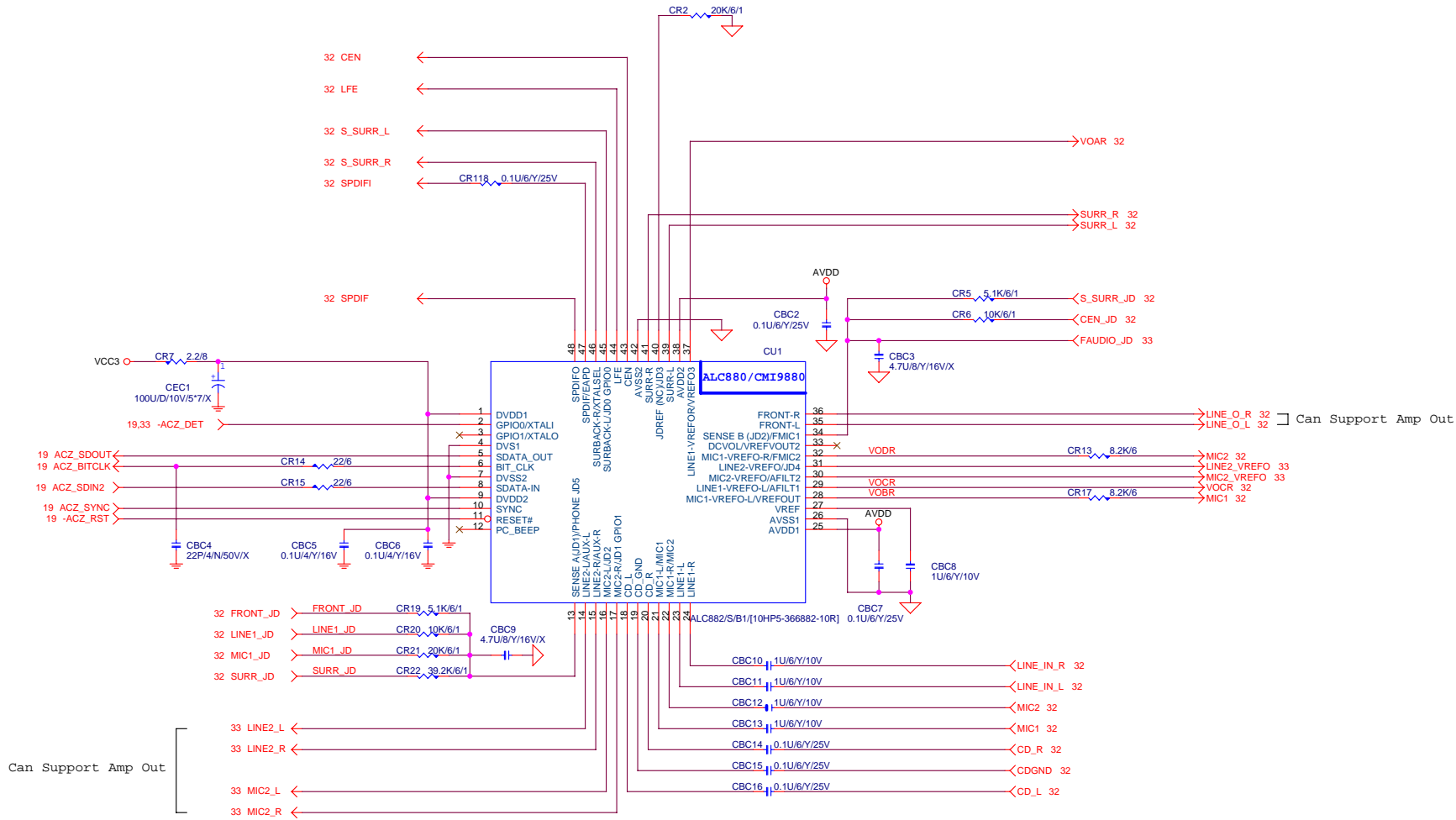


asserted at 131 degree  
deasserted at 116 degree



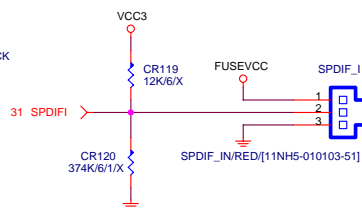
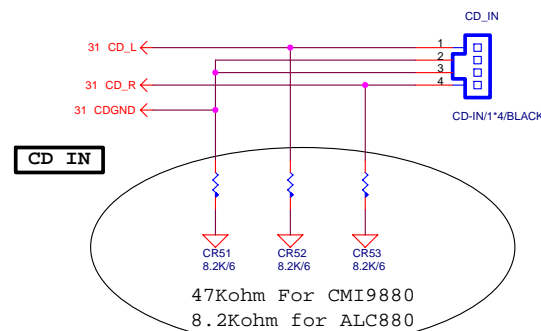
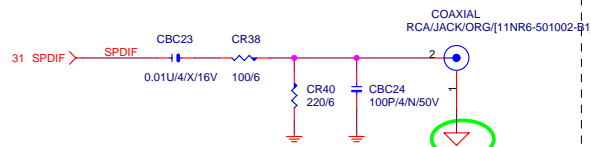
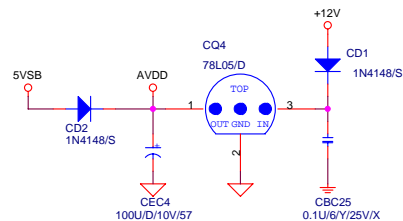
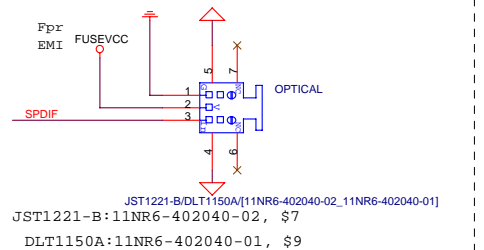
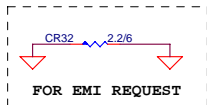
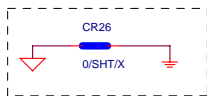
Intel Confidential

Title			
FAN CONTROL			
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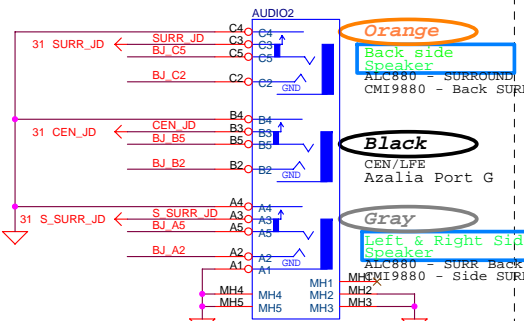
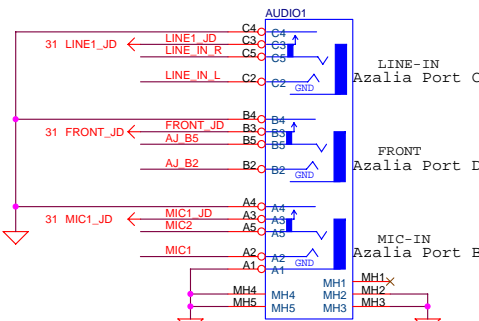
Intel Confidential

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Azalia Jack  
Normal --> pin4/pin3 open  
Plug jack --> pin4/pin3 close

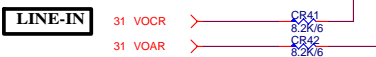
CMI9880 Port A is Side SURROUND, Port H is Back SURROUND  
ALC880 Port A is SURROUND, Port H is SIDE



## LINE OUT FRONT OUT



## LINE-IN



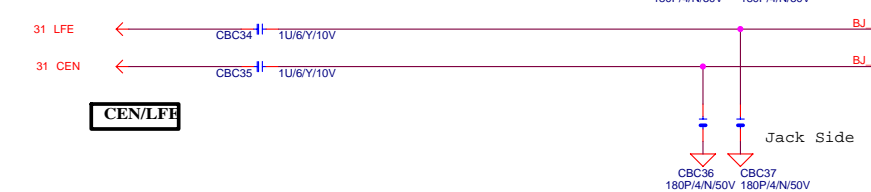
## MIC



## SURROUND



## CEN/LFE



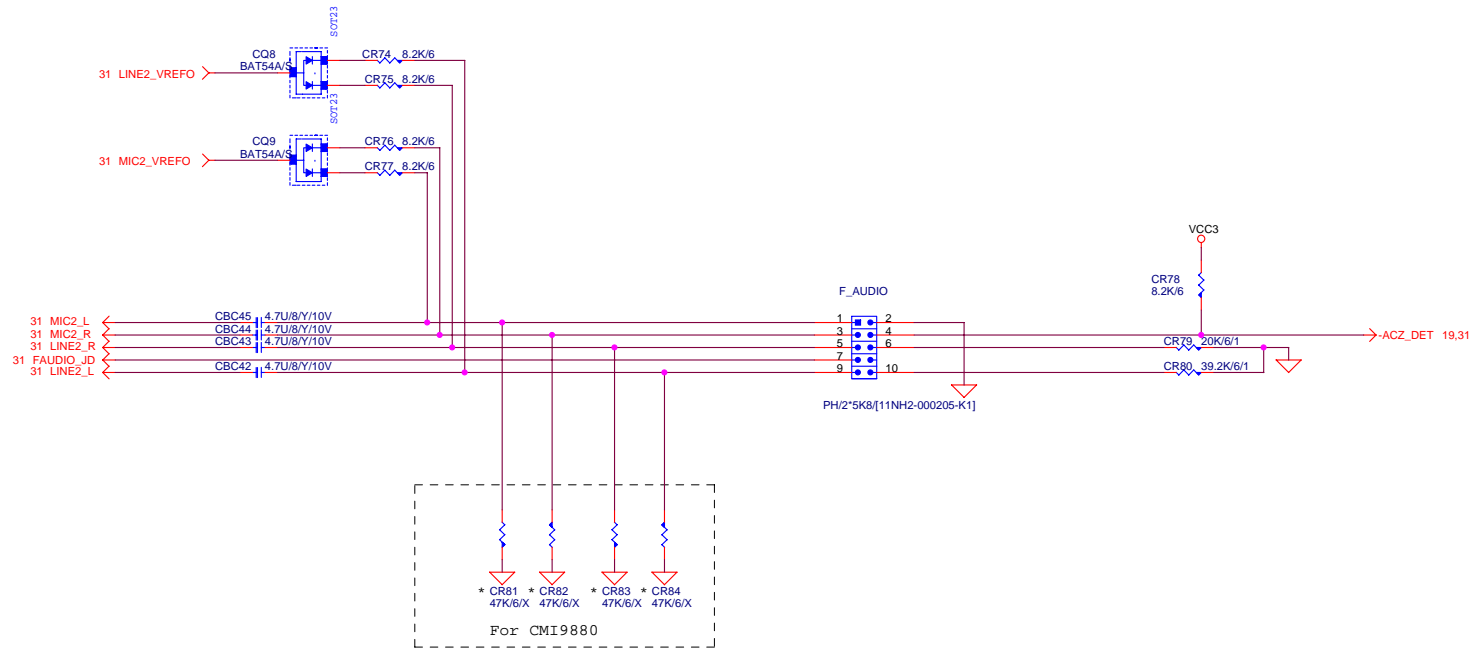
## SURR BACK



Intel Confidential			
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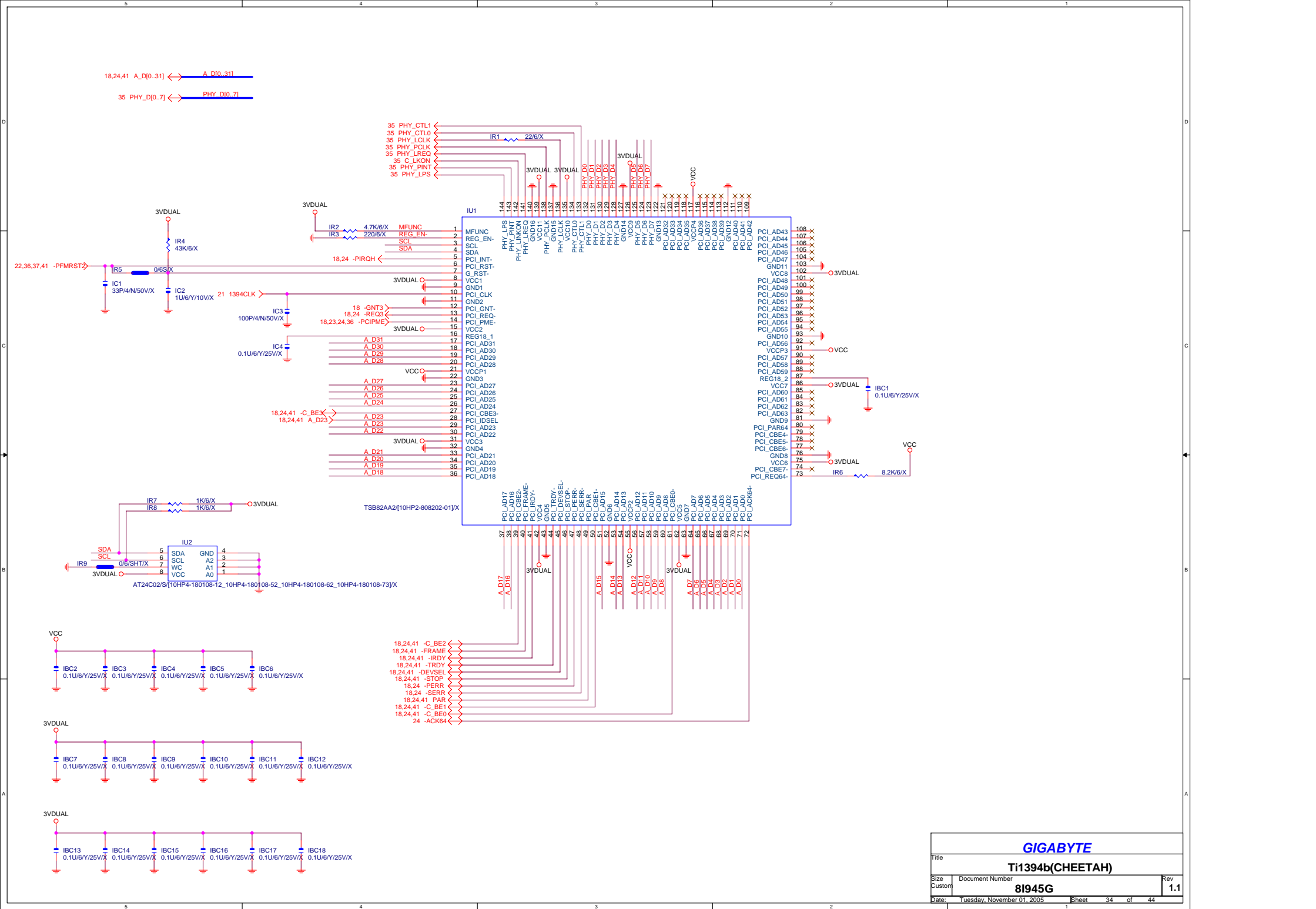


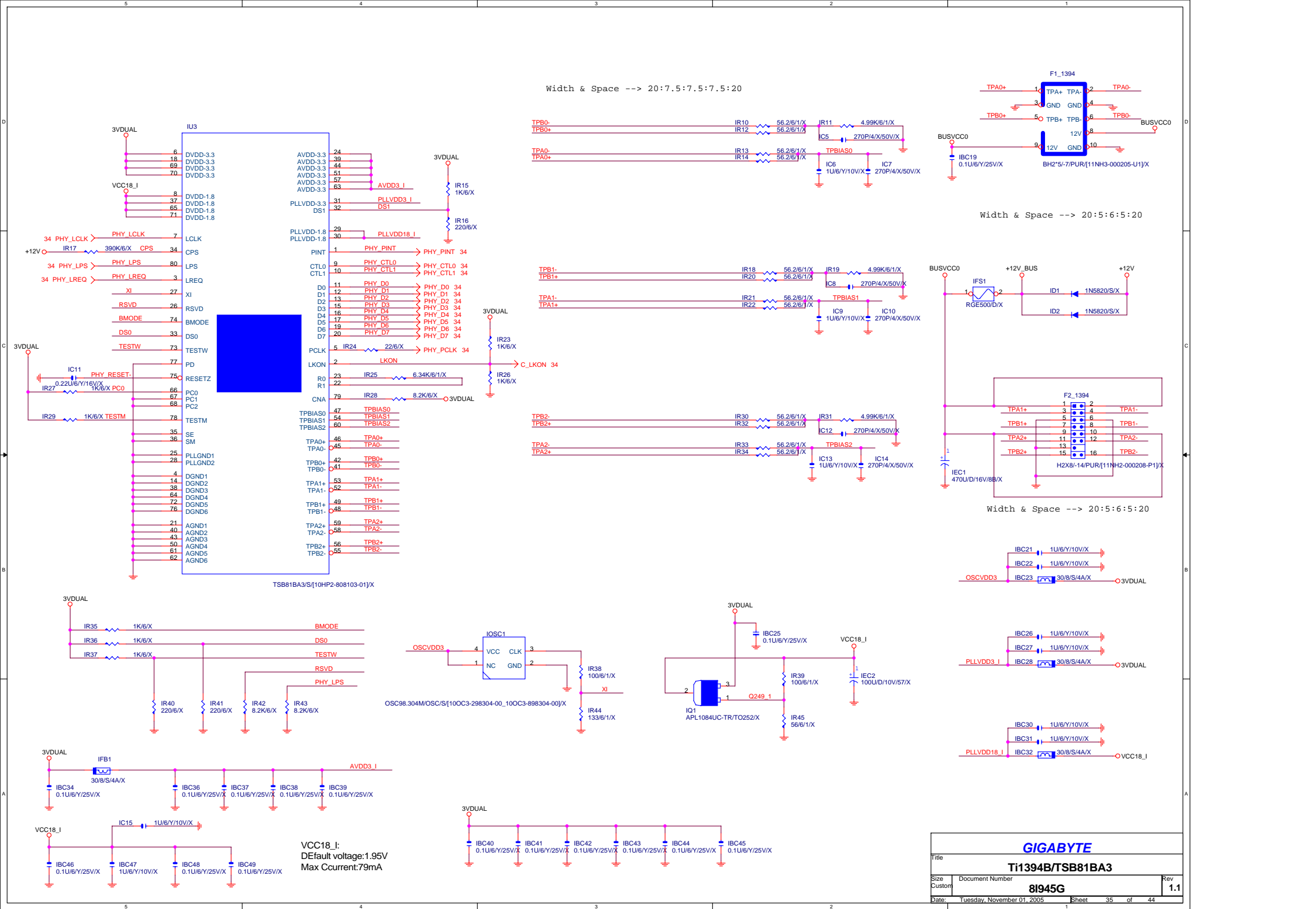
Azalia Port F  
Azalia Port E

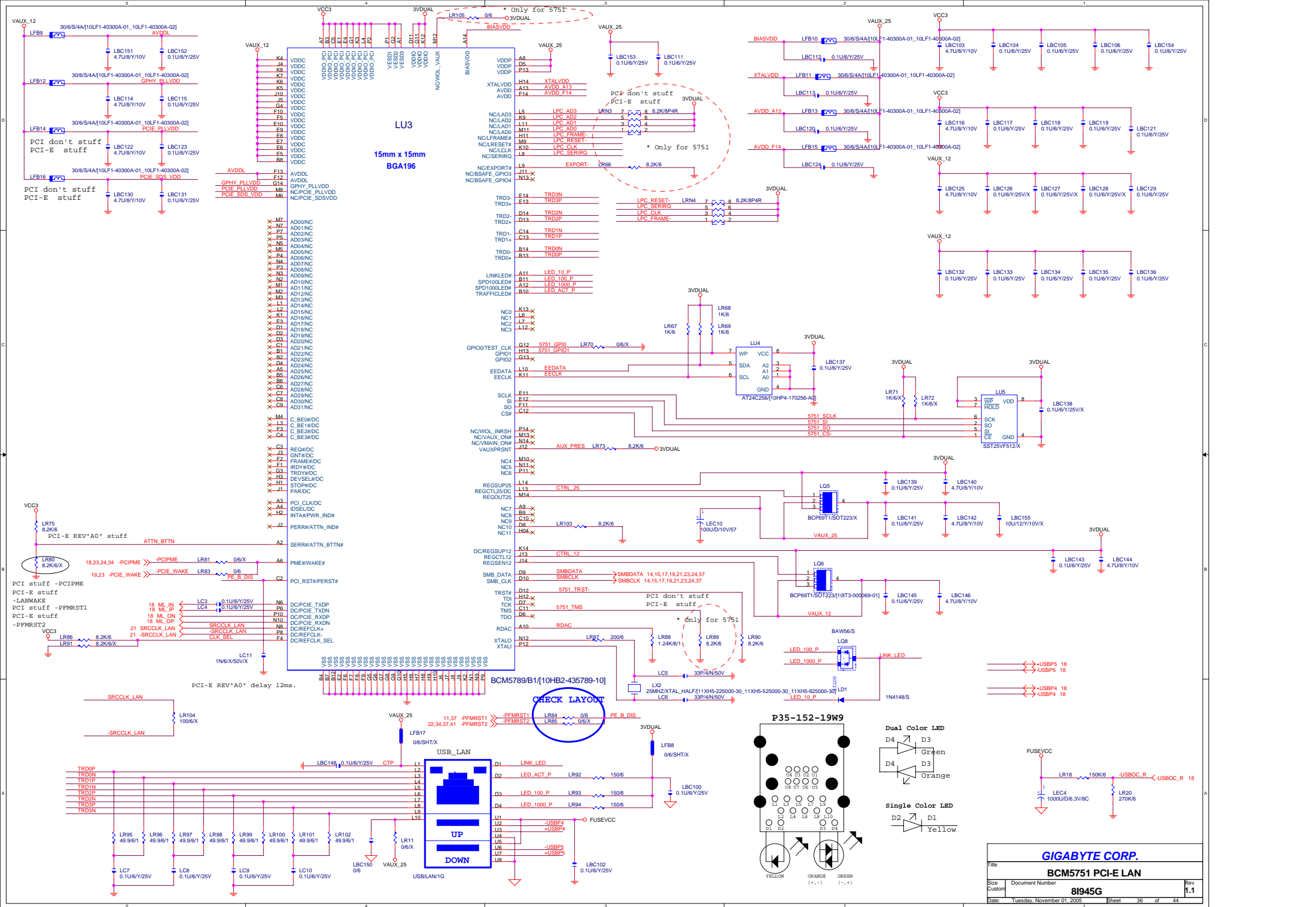


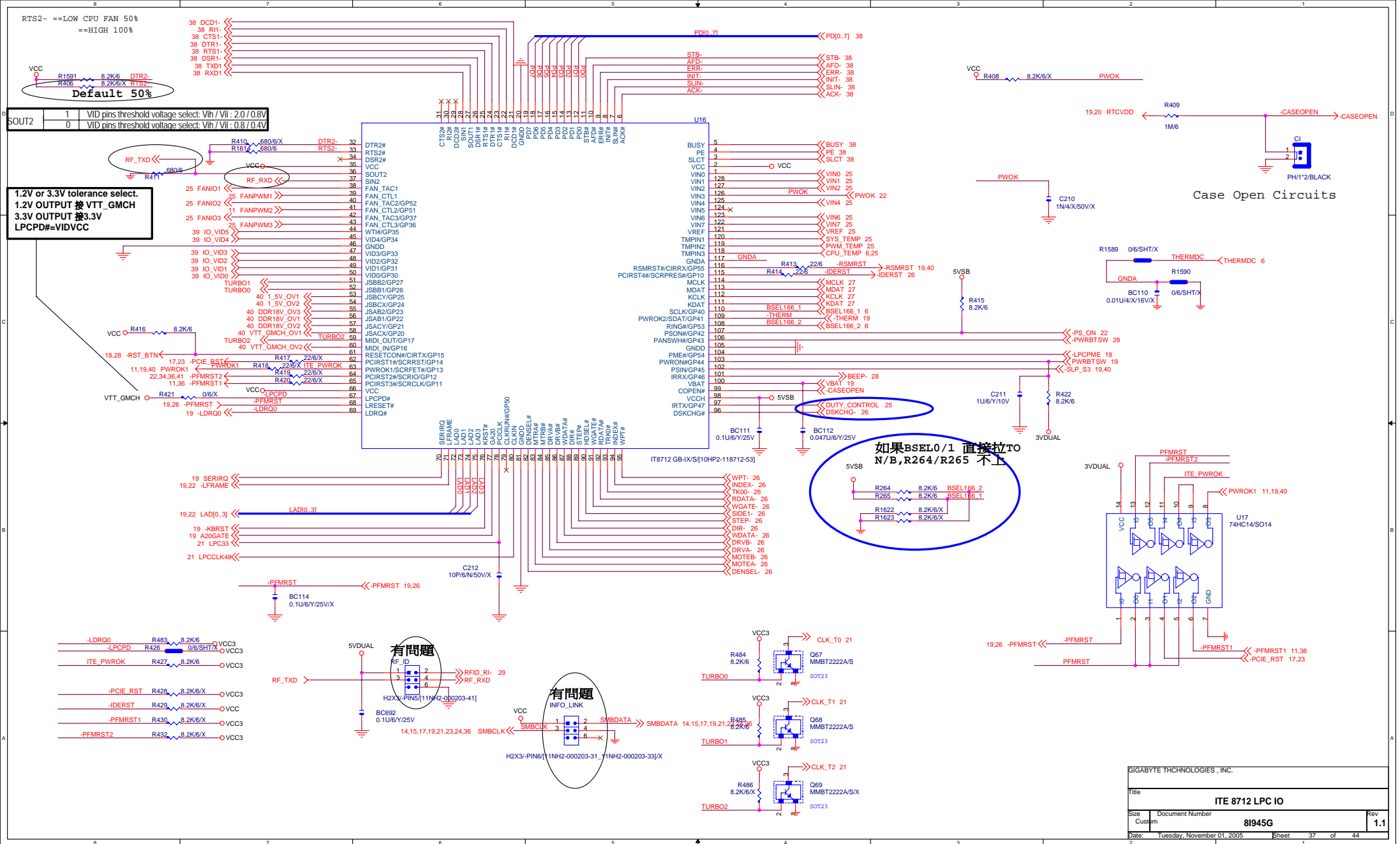
Intel Confidential

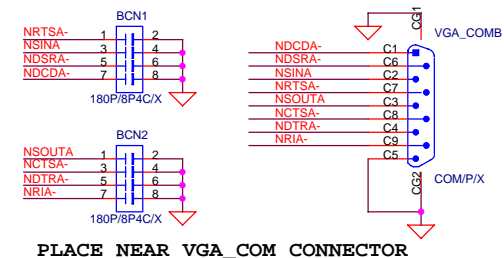
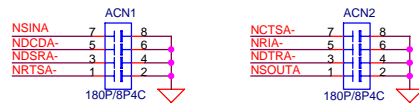
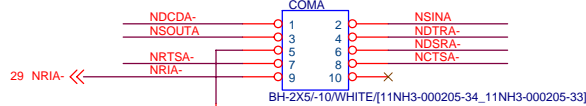
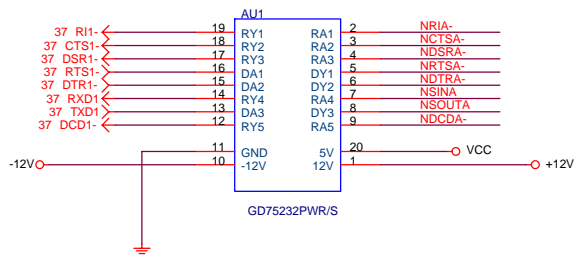
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FRONT AUDIO CONNECTOR			
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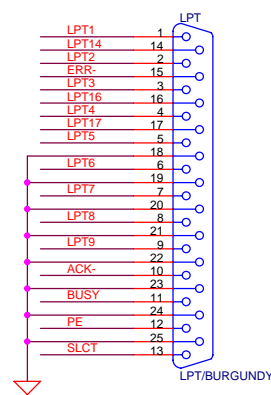
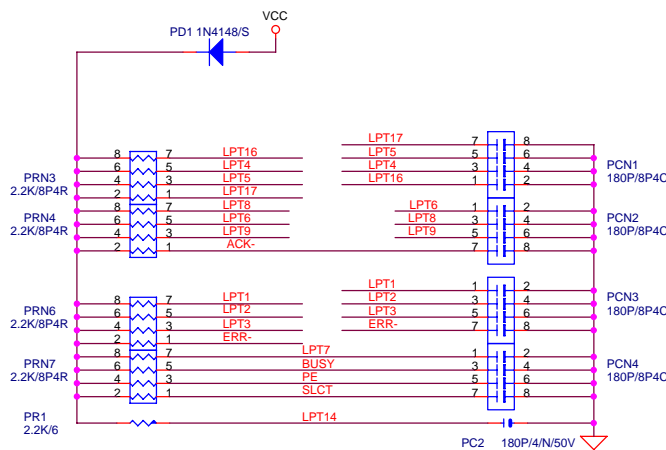
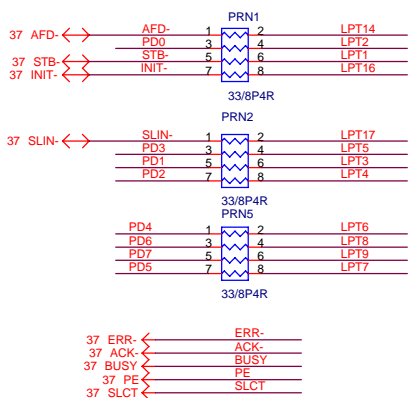






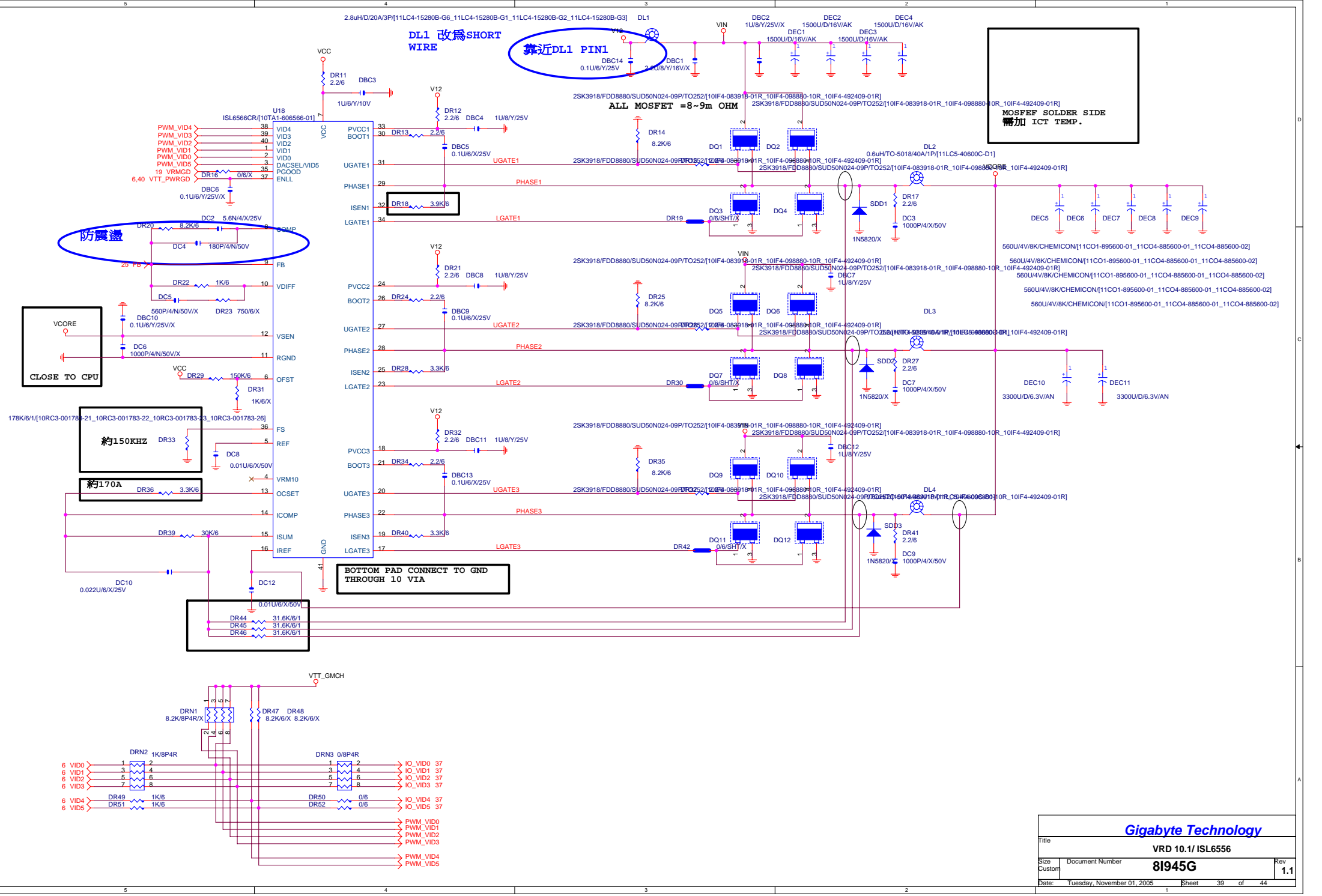
PLACE NEAR VGA\_COM CONNECTOR

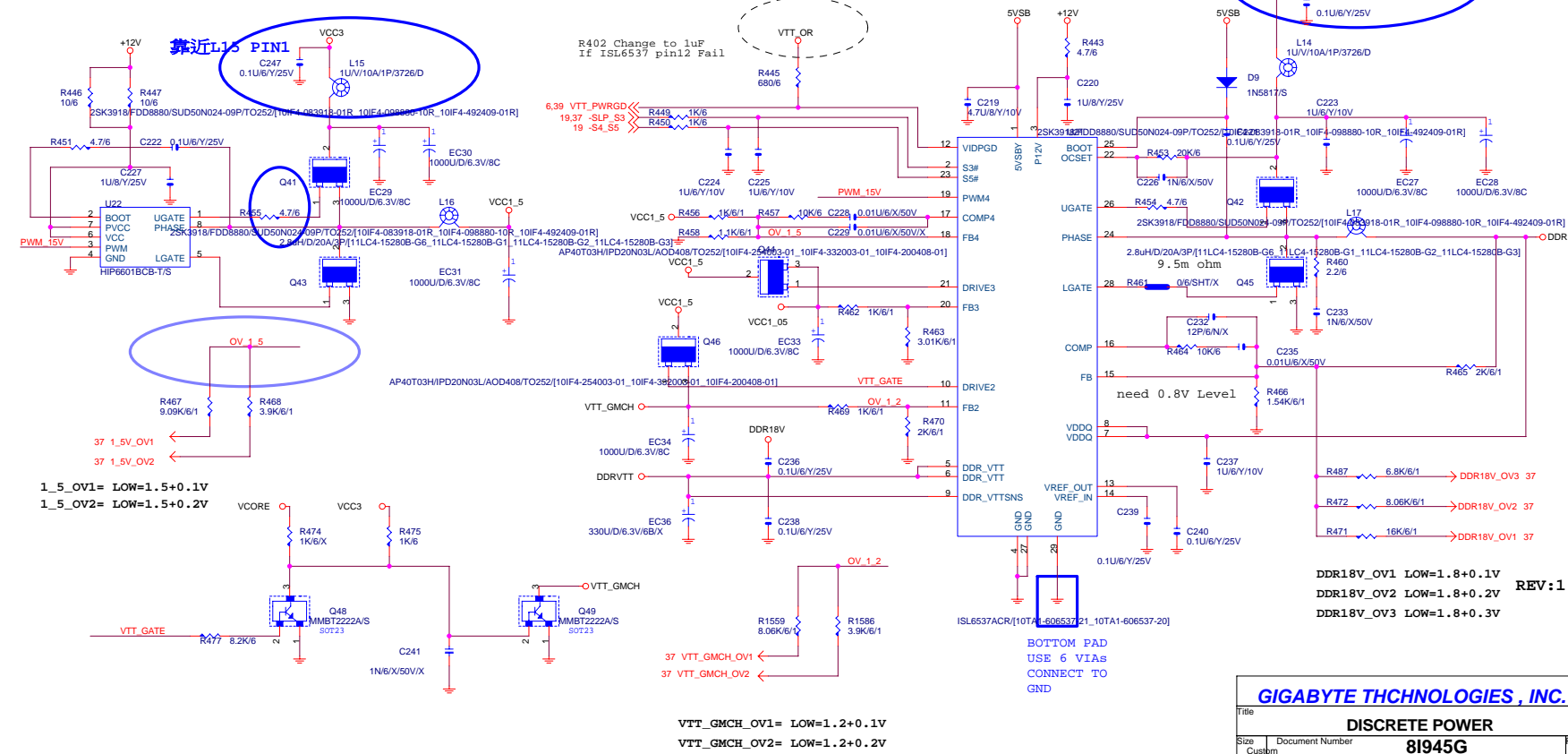
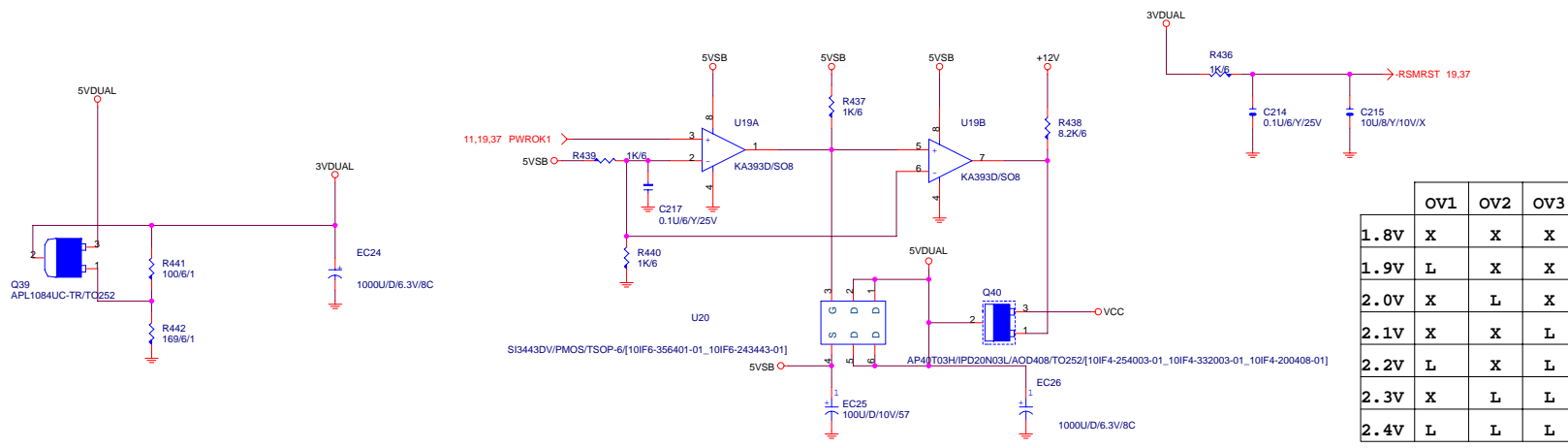
37 PD[0..7] ↔ PD[0..7]



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Title			
COM & IR & LPT PORT & FLOOPY			
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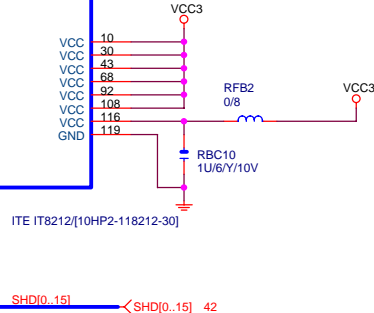
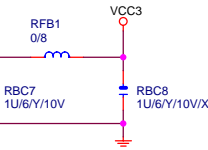
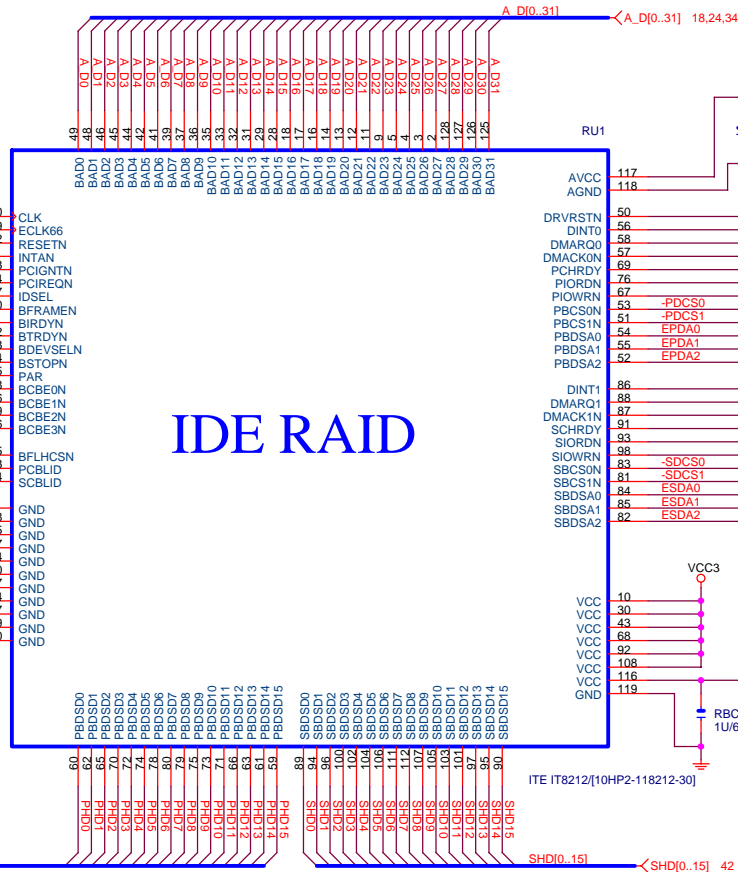
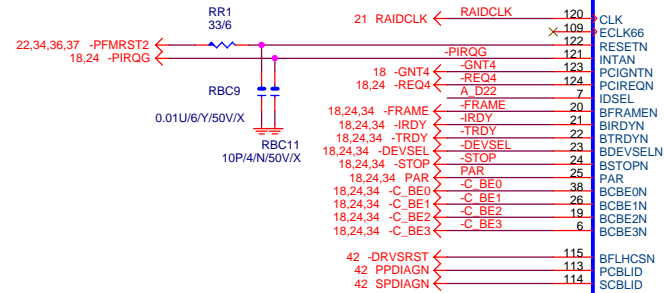
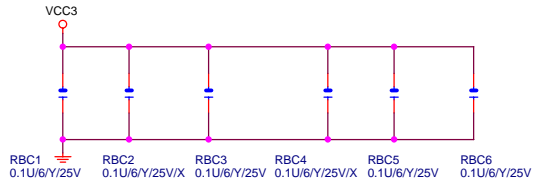


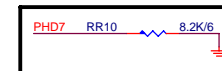
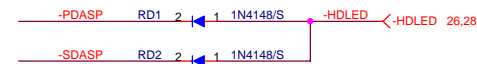
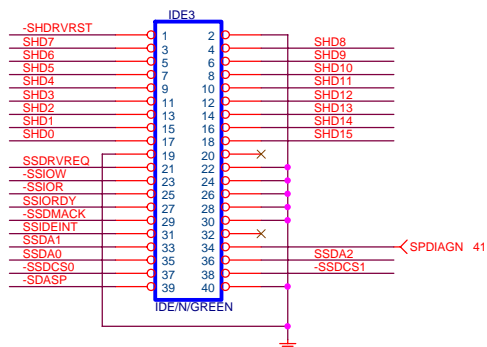
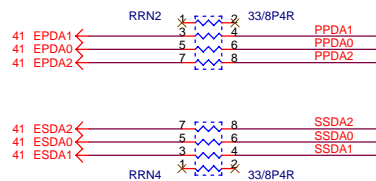
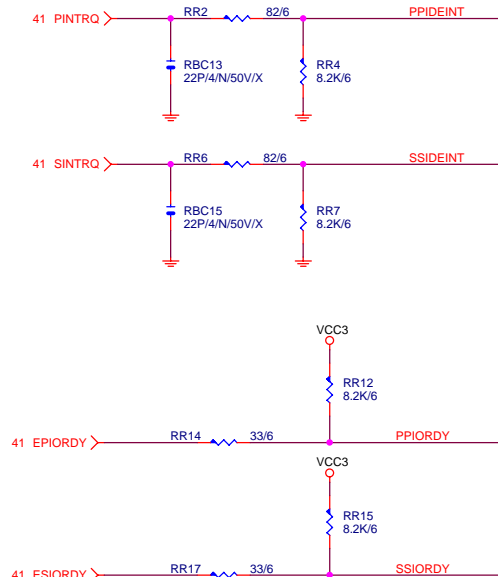
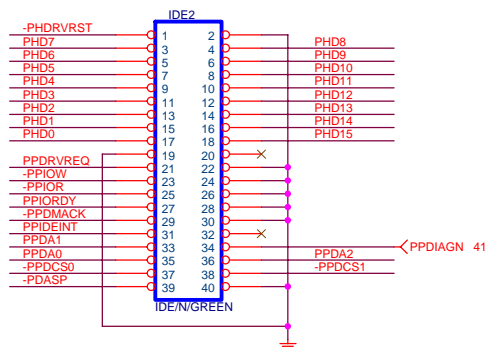
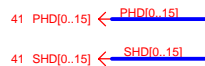
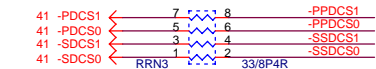
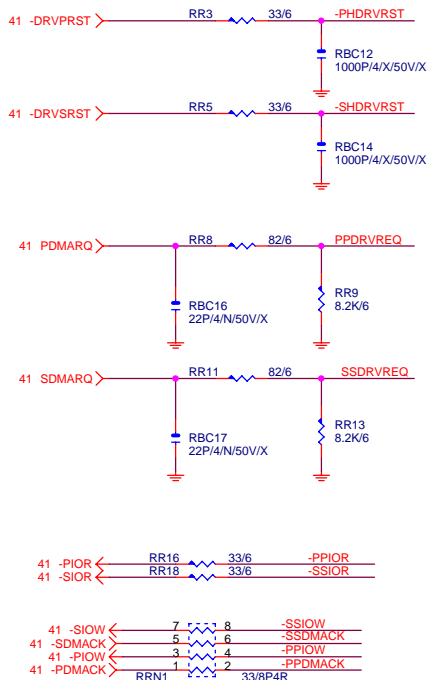


靠近L14 PIN1



ALL INPUT PIN MUST HAVE 0.1 CAPACITOR





*GPI PIN*

Pin Name	Pin Type	Power Well			GPIO Application
GPIO[0]	I/O	VCC3	GPIO/BM_BUSY#	(NA)	(NA)
GPIO[1]	I/O	VCC	-REQ[5]	(P.U VCC)	-REQ[5]
GPIO[5:2]	I/OD	VCC	-PIRQ[H:E]	(P.U VCC)	-PIRQ[H:E]
GPIO[6]	I/O	VCC3	GPI	(NA)	M_ID0 FOR MEDIA
GPIO[7]	I/O	VCC3	GPI	(NA)	DUALBIOS_INPUT
GPIO[8]	I/O	3VDUAL	GPI	(P.U 3VDUAL)	-SKTOCC
GPIO[9]	I/O	3VDUAL	GPI	(NA)	P66DET
GPIO[10]	I/O	3VDUAL	GPI	(NA)	M_ID1 FOR MB_ID
GPIO[11]	I/O	3VDUAL	-SMBALERT	(P.U 3VDUAL)	-SMBALRT
GPIO[12]	I/O	3VDUAL	GPI	(NA)	M_ID2 FOR MB_ID
GPIO[13]	I/O	3VDUAL	GPI	(P.U 3VDUAL)	-LPCPME
GPIO[14]	I/O	3VDUAL	GPI	(NA)	M_ID3 FOR MB_ID
GPIO[15]	I/O	3VDUAL	GPI	(NA)	-ACZ_DET
GPIO[16]	I/O	VCC3	GPO	P.D 20K(INT.)	HW RESET
GPIO[17]	I/O	VCC3	GPO/-GNT[5]	(NA)	GPO/-GNT[5]
GPIO[18]	I/O	VCC3	GPO/toggle	(NA)	(NA)
GPIO[19]	I/O	VCC3	SATA1GP	(P.U VCC3)	SATA1GP
GPIO[20]	I/O	VCC3	GPO	(P.U VCC3)	TBL-
GPIO[21]	I/O	VCC3	SATA0GP	(P.U VCC3)	SATA0GP
GPIO[22]	I/O	VCC3	-REQ[4]	(P.U VCC)	-REQ[4]
GPIO[23]	I/O	VCC3	LDRQ1#	(NA)	(NA)
GPIO[24]	I/O	3VDUAL	GPO/reset not cleared	(NA)	(NA)
GPIO[25]	I/O	3VDUAL	GPO	(NA)	PWD_LED
GPIO[26]	I/O	3VDUAL	EL_RSVD	(P.D)	-SPI_WP
GPIO[27]	I/O	3VDUAL	EL_STATE0	(NA)	(NA)
GPIO[28]	I/O	3VDUAL	EL_STATE1	(NA)	(NA)
GPIO[29]	I/O	3VDUAL	OC5#	(P.U VCC 分壓))	OC5#
GPIO[30]	I/O	3VDUAL	OC6#	(P.U VCC 分壓))	OC6#
GPIO[31]	I/O	3VDUAL	OC7#	(P.U VCC 分壓))	OC7#
GPIO[32]	I/O	VCC3	GPO	(NA)	DUAL_BIOS
GPIO[33]	I/O	VCC3	GPO	(NA)	DUAL_BIOS
GPIO[34]	I/O	VCC3	GPO	(P.U VCC3)	FWP-
GPIO[35]	I/O	VCC3	SATACLKREQ#	(NA)	(NA)
GPIO[36]	I	VCC3	SATA2GP	(P.U VCC3)	SATA2GP
GPIO[37]	I	VCC3	SATA3GP	(P.U VCC3)	SATA3GP

*GPO PIN*

Pin Name	Pin Number	Power Well	Pin Type		GPIO Application
GPIO[38]	I/O	VCC3	GPI	(NA)	(NA)
GPIO[39]	I/O	VCC3	GPI	(NA)	(NA)
GPIO[40:47]		NOT IMPLEMENTED		NOT IMPLEMENTED	
GPIO[48]	I/O	VCC3	-GNT[4]	(NA)	-GNT[4]
GPIO[49]	I/O	VTT_GMCH	CPUPWRGD	(P.U VTT_OL)	CPUPWROK
PCI1	PCLK0	-PCIRST	-REQ0/-GNT0	-PIRQE	A_D16
PCI2	PCLK1	-PCIRST	-REQ1/-GNT1	-PIRQD	A_D17
PCI3	PCLK2	-PCIRST	-REQ2/-GNT2	-PIRQC	A_D18
1394b	1394CLK	-PFMRST2	-REQ3/-GNT3	-PIRQH	A_D23
IT8212	RAIDCLK	-PFMRST2	-REQ4/-GNT4	-PIRQG	A_D22

ICH6 GPIO Table:

NAME	PWR LANE	USAGE	NAME	PWR LANE	USAGE
GPI0	V5REF	M/B ID (-REQ6)	GPI41	VCC3	M/B ID
GPI1	V5REF	-REQ5	GPO48	VCC3	-GNT4
GPI2	V5REF	-PIRQE	GPO49	V-CPUIO	CPUPWOK
GPI3	V5REF	-PIRQF			
GPI4	V5REF	-PIRQG			
GPI5	V5REF	-PIRQH			
GPI6	VCC3	-SLP BTN			
GPI7	VCC3	DUAL BIOS			
GPI8	3VDAUL	-LANWAKE			
GPI9	3VDAUL	-USBOC4			
GPI10	3VDAUL	-USBOC5			
GPI11	3VDAUL	-SMBALT			
GPI12	VCC3	ATX DET			
GPI13	3VDAUL	-LPCPME			
GPI14	3VDAUL	-USBOC6			
GPI15	3VDAUL	-USBOC7			
GPO16	VCC3	CPU OV1 (-GNT6)			
GPO17	VCC3	-GNT5			
GPO18	VCC3	CPU OV2			
GPO19	VCC3	DUAL BIOS			
GPO20	VCC3	BIOS T-BLOCK			
GPO21	VCC3	DUAL BIOS			
GPO23	VCC3	DDR OV0			
GPI024	3VDAUL	GREEN LED			
GPI025	3VDAUL	DDR OV1			
GPI26	VCC3	SATA GP0			
GPI027	3VDAUL	+PWRLED			
GPI028	3VDAUL	-PWRLED			
GPI29	VCC3	SATA GP1			
GPI30	VCC3	SATA GP2			
GPI31	VCC3	SATA GP3			
GPI032	VCC3	BIOS WP			
GPI033	VCC3	AZALIA DET			
GPI034	VCC3	PWRLED			
GPI40	V5REF	-REQ4			

PWROK/RESET Table:

ITE8712BHX PIN	NET NAME	TARGET
PIN62/-PCIRST1	-PCIE_RST	1. PCI-E * 1 Slot1 2. PCI-E * 1 Slot2 3. PCI-E * 1 Slot3 4. PCI-E * 16 Slot
PIN64/-PCIRST2	-PFMRST2	1. Onboard PCI Lan 2. Onboard 1394 Chip 3. OnBoard FWH
PIN65/-PCIRST3	-PFMRST1	1. Onboard PCI-E Lan 2. Onboard SATA Chip 3. GMCH
PIN115/-PCIRST4	-PFMRST -IDERST	Reserved For IDE
PIN63/PWROK1	PWROK1	1. GMCH 2. ICH6 3. 5VDUAL SWITCH 4. DPS CONTROL
PIN109/PWROK2	-THERM	1. ICH6

**GIGABYTE THCHNOLOGIES , INC.**

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